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**ENGLAND 1859.**

*Established in*

**AUSTRALASIA - 1885.**

TELEGRAPHIC ADDRESS,  
"CHEMICUS LONDON."

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Subscription 2s. 6d. per annum, including 12 issues, 4d. each.  
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THE BEST NATURAL APERIENT WATER.

**TRADE PRICES, per Case :**

25 Large Bottles, 20/-; 50 Small Bottles, 32/6; 100 Quarter Bottles, 32/6 { Carriage paid to any Railway Station in the United Kingdom.

5 per cent. Discount upon Orders for 10 Cases.

**TERMS:—Six Months' Credit from date of Invoice, Net Cash.**

THE APOLLINARIS COMPANY, LIMITED, 4 Stratford Place, Oxford Street, LONDON, W.

## THE "Allenburys" Capsules & Perles.

**OF SUPERIOR EXCELLENCE AND FINISH. SAMPLES FREE.**



In Boxes as above, bearing Allen & Hanburys' Name,  
at 8/-, 21/-, and 40/- per dozen.

Special Advantages of the "Allenburys"  
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FREEDOM FROM SMELL.

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Supplied also in BULK, or put up in Boxes with Chemist's Name.

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**Allen & Hanburys Ltd.,** Plough Court, Lombard Street, **London.**

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## POTASSIUM CYANIDE CAKE

30% to 70%

GENUINE POTASH SALT.

CORROSIVE SUBLIMATE AND ALL PREPARATIONS OF MERCURY

PURE CHLOROFORM, ETHERS AND COLLODIONS.

FRUIT ESSENCES (*from Fruit*).

HYDROGEN PEROXIDE (Bleaching and Medicinal).

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"BISMUTH LONDON."  
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Telephone  
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GARDEN WHARF, CHURCH ROAD, BATTERSEA, LONDON, S.W.

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SOLUBLE  
ESSENCE OF

# JAMAICA GINGER

"EXTRA QUALITY"

BRINGING THE  
GINGER  
TO MARKET

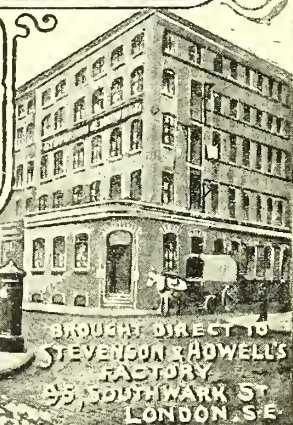
Containing all the constituents of the Finest Jamaica Ginger  
in a PERFECTLY SOLUBLE FORM.

UNSURPASSED FOR **STRENGTH, FLAVOUR & AROMA**

See "THE LANCET."—July 3rd, 1886.

STEVENSON & HOWELL'S EXTRA QUALITY SOLUBLE ESSENCE  
OF JAMAICA GINGER

"According to our analysis and examination this is a perfect ginger  
essence. We have searched most carefully for the active principle of  
capsicum and have not found the slightest trace. As might be expected  
from its composition, the flavour of this essence is more delicate than  
that of the finest root."



**STEVENSON & HOWELL LTD 95, Southwark St. LONDON S.E.**

DISTILLERY—OLD PARIS GARDENS, S.E. || MANCHESTER OFFICE—4, PRODUCE EXCHANGE, FENNEL ST.

N.B.—The List will be opened for London and Country on 10th September and closed on 14th September (Continental applications on 15th September).

# BERTIE-SMITH & CO., LTD.

(Incorporated under the Indian Companies Act of 1882)

**SHARE CAPITAL .. .. £45,000; Rs. 6,75,000. (With power to increase.)**

3,000 6% Cumulative Pref. Shares of £10 (Rs. 150) each = £30,000 (Rs. 4,50,000).

1,500 Ordinary Shares of £10 (Rs. 150) each = £15,000 (Rs. 2,25,000).

Payable as follows:—£3 (Rs. 45) on application; £3 (Rs. 45) on allotment; £4 (Rs. 60) on September 30th, 1900.

The Preference Shares confer the right to a Cumulative Preferential Dividend at the rate of 6% per annum payable half-yearly, also the right of payment of Capital in priority to Ordinary Shares. The Dividend is payable free of Income Tax either in Bombay or London, at Rs. 15 per £ sterling.

The Preference Shares are also entitled to participate further in any available profits, after this dividend has been paid, to the extent of 25% of the same.

The Ordinary Shares (which will all be taken by the Vendors), are entitled only to 75% of the available profits remaining after the dividend of 6% has been paid on the Preference Shares.

## DIRECTORS

SIR JAMSETJEE JEJEEBHAY, BART., Chairman

HEUGH S. SYMONS, Esq.

EDWIN R. SMETHAM, Esq. (of Messrs. Smetham, Bland & Noble).

I. DAVID, Esq. (late of Messrs. S. J. David & Co., Shaughis).

J. STANLEY-SMITH, Esq. (Managing Director).

## BANKERS.

Messrs. KING, KING, KING & CO., Bombay.

THE BANK OF UPPER INDIA, Ltd., Delhi.

## SOLICITORS.

Messrs. SMETHAM, BLAND & NOBLE, Church Gate Street, Bombay.

## AUDITORS.

Messrs. FERGUSON & IRVINE, Chartered Accountants, Bombay.

## REGISTERED OFFICES.

BOMBAY .. .. 25, 27, 29, 31 APOLLO STREET

## LONDON BANKERS.

MARTIN'S BANK, Ltd., 68 Lombard Street, E.C.

## PROSPECTUS.

The Company is formed to acquire, carry on, and develop:—

(1) The well-established business of Wholesale and Export Drug Merchants and East India Agents now carried on at 23, 25, 27, 29, and 31 Apollo Street, Bombay, and at Kashmir Gate, Delhi.

(2) The various concessions enumerated under:—

The firm are the proprietors of the Sole rights of sale in India and Burma of the Pasteur Malté Filter, Naftalan, Fahlberg's Saccharin, Odol, Terol, and Messrs. Newball & Mason's Preparations, and have special terms as Agents for Messrs. Armour & Co., of Chicago and London; Messrs. J. & E. Atkinson (Limited), of Old Bond Street; Messrs. Ayrton & Saunders, Liverpool; The Berlin Carbonic Acid Gas Co. (Limited), Berlin; Messrs. Clayton & Jowett (Limited), Liverpool; Messrs. Farrow & Jackson (Limited), of London, &c., &c.

The Firm of Bertie-Smith & Co. is well known, especially to the large Industry of Mineral Water Manufacturers, more particularly amongst the Regional Soda-water Factories, which are in most cases the best organised Mineral-water Makers in India.

They have also a good connection with all the Leading Chemists and Druggists in India, and have an Export business with Europe. The business is a profitable one, and is capable of much further development.

The profits from the year 1895 show a substantial increase each year, and as the initial expenses have been incurred in introducing and establishing the various Specialities, the Indian Rights of which are owned by the Vendors, the future prospect of the business can, without any exaggeration, be considered most promising, and this, with the increased Capital, should give a much higher return to the Preference Shareholders than 6%.

The business will be taken over as a going concern as from the 30th day of June, 1900. The Vendors will discharge all Liabilities of the Firm existing at that date.

The reason for the conversion of the firm Bertie-Smith & Co. into a Limited Liability Company is that the Capital of the Vendors has been inadequate for the rapid growth and extension of the business as indicated by the Auditors' report.

The business has in consequence been carried on to some extent by the assistance (with all its disadvantages) of borrowed Capital, which it is intended to pay off.

Mr. John Stanley Smith, who has had the active management of the firm of Bertie-Smith & Co. for the last five years will, under agreement, continue to manage the same, and will not carry on or be interested in any rival business of the Company, but will devote his whole services to the interests of the Company.

The Assets of the firm to be acquired by the Company consist of:—

(i) The Stock in-Trade, Machinery, Plant, Furniture and Fixtures.

(ii) The Book Debts, which will be guaranteed by the Vendors.

(iii) The Vendors' Leases.

(iv) Sole rights of sale in India, Burma, and Ceylon of the Pasteur Malté Filter for a period of about 8 years, with the option of extension for a further 10.

(v) The sole rights of sale of Odol in India for a period of about 4 years with power of extension.

(vi) Sole rights of sale of Naftalan.

(vii) The sole rights of sale of Terol in India, Burma, and Ceylon for a period of about 2 years with option of extension for a further 10 years.

(viii) Various other Agencies held.

(ix) The Private Formulae of the Vendors.

(x) The Goodwill of the business.

The value of the Stock-in-Trade, Machinery, Plant, Fixtures, Book Debts, amounted on June 30th, 1899, to Rs. 4,01,643-8-7, at 1s. 4d. Exchange = £26,740 5s. 9d.).

The price to be paid for the Purchase of the business is fixed as under:—

STOCK-IN-TRADE, PLANT, FIXTURES.—Actual value as on June 30th,

1900, on the basis of the prices approved by Mr. Eakin (see his report on the same).

BOOK DEBTS.—The amount standing on the Books on June 30th, 1900.

It is estimated that the total amount to be adjusted between the Vendors and the Company will be £25,000 (Rs. 3,75,000).

The Vendors claim the option of taking portion of this amount in Preference Shares.

For the Indian Monopolies, Private Formulae, Agencies, Leases transferred to the Company by the Vendors .. .. £12,500; Rs. 1,87,500

For the Goodwill .. .. £2,500; Rs. 37,500

Total .. .. £15,000; Rs. 2,25,000

In adjustment of this amount the Vendors take all the Ordinary Shares.

The Preference Shares (which therefore will be the only ones offered to the Public) are thus fully secured, and any balance out of £30,000 not required to adjust the amount due to the Vendors for the Stock-in-Trade and Book Debts will be Cash belonging to the Company, which with the Stock Book Debts, is amply sufficient to carry on efficiently the business of the Company.

## THE ACCOUNTANTS' REPORT.

Messrs. BERTIE-SMITH & Co., Ltd.—Gentlemen,—We beg to report that we have scrutinised the Books of the Bombay and Delhi Business carried on by Messrs. Bertie-Smith & Co., Wholesale Drug Merchants and East India Agents, for the three years and ten months ending June 30th, 1899, and we find therefrom that the profits (before charging interest on Capital and Loans, and Partners' remuneration) have been as follows:—

FOR THE 2 YEARS Ending 31st August, 1897, Rs. 68,393-12-0.

(@ Ex. 1s. 4d. £4,593 5s. 0d.)

(For one year on this basis, Rs. 34,499-6-0.)

(@ Ex. 1s. 4d. £2,296 12s. 6d.)

FOR THE 10 MONTHS ending 30th June, 1898, Rs. 36,415-2-10.

(@ Ex. 1s. 4d. £2,427 13s. 7d.)

(For one year on this basis Rs. 43,698-3-5.)

(@ Ex. 1s. 4d. £2,913 4s. 3d.)

FOR THE YEAR ending 30th June 1899, Rs. 60,519-4-7.

(@ Ex. 1s. 4d. £4,034 12s. 4d.)

The profits for the year ending 30th June, 1899, are based on the value of the Stocks which amount to Rs. 2,24,113-14-8, as taken by the Vendors and subsequently verified by Mr. Jaa. Eakin (Manager, Bombay Drug Department, Army & Navy Co-operative Society, Ltd.) and Mr. W. Doyle of Messrs. C. Hoskins & Co., Chemists and Druggists, Meerut, whose reports are attached.

We have made a detailed examination of the Outstandings due to the Firm, which amount to Rs. 1,65,011-1-5, and provision, which we consider sufficient, has been made for doubtful debts before arriving at the above profits.

The Bombay Plant, Furniture, and Fittings belonging to the Firm has been valued by Messrs. Crawford & Co., Valuers, Bombay, and amount to Rs. 12,266-12-6.

We may mention that extraordinary expenses have been incurred during the year to 30th June, 1899, amounting to about Rs. 8,000, in connection with bringing the Malté Filter under the notice of the Indian Government, and these expenses have been entirely written off before ascertaining the profits for that year. We are, Gentlemen, yours faithfully,

(Sd.) FERGUSON & IRVINE,

Bombay, 13th September, 1899. Chartered Accountants,

Bombay, August 30th, 1899.

Messrs. FERGUSON & IRVINE, Chartered Accountants.

Gentlemen,—I beg to report that I have carefully examined the Stock-in-trade belonging to Messrs. Bertie-Smith & Co., at Bombay, and checked the same, as at 30th June, 1899, with the lists prepared by them.

The Bombay Stock amounts to .. .. Rs. 2,03,835 5 7

The Delhi Stock .. .. Rs. 20,778 9 1

Total .. .. Rs. 2,24,113 14 8

Faithfully yours,

(Signed) JAMES EAKIN, M.P.S.,

(Manager, Drug Department,

A. & N. Co-operative Society, Ltd., Bombay.)

The net profit after deducting Salaries, Rent, &c. (but before charging interest on Capital and Loans' and Partners' remuneration) for the year ending June 30th, 1899, was £4,034 12s. 4d., and for the year just ending (as the turnover has increased considerably) this amount should be an increased one.

Vendors are prepared to guarantee the Preferential Dividend of 6% for a period of three years from date of formation.

On the basis of the Profits for the year ending June 30th, 1900, the following would be approximately the results to the Preference Shareholders.

6% on £20,000 (Rs. 4,00,000) = £1,200 = Rs. 17,000-0-0

Managing Director's Salary £ 800 Rs. 12,000-0-0

For Director's Fees, say £ 200 Rs. 3,000-0-0

Balance for further disposal of £1,234 12s. 4d. Rs. 18,519-4-0

Total .. .. £4,034 12s. 4d. Rs. 60,519-4-0

Therefore 25% of this balance would be payable to the Preference Shareholders = 1% .. £308-13-1 or Rs. 4,500. All expenses incurred on Registration will be borne by the Company.

**APPLICATION FOR SHARES** must be made on the form accompanying the Prospectus, and forwarded to the Bankers of the Company with the full amount of the DEPOSIT.

If no allotment is made the deposit will be returned in full, and where the number of shares allotted is less than applied for, the balance will be applied in or towards the payment due on allotment, and the excess will be returned to the Applicant.

(Copy of the Articles of Association can be inspected, and Prospectuses obtained, at the Offices of our London Agents, Messrs SAM'L LAMBERT & CO., 132 Fenchurch Street, E.C.)

THE  
**School of Pharmacy**

OF THE

**PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.**

.....

**FIFTY-NINTH SESSION.****PROFESSORS—***Botany*—J. REYNOLDS GREEN, Sc.D., F.R.S., F.L.S. (Dean).*Chemistry*—J. NORMAN COLLIE, Ph.D., F.R.S.*Pharmaceutics*—HENRY G. GREENISH, F.I.C., F.L.S.

During the Session there will be two complete Courses of Instruction, an Elementary Course, which will commence in October and terminate in June, and an Advanced Course, which will commence in October and terminate in March.

The Prizes of last Session will be distributed by the President on Monday, October 1st, at 3 P.M., and an Inaugural Address to the Students will be given by Professor W. Ramsay, F.R.S., Professor of Chemistry, University College, London. All Students and their friends are invited to be present. After the proceedings the various departments of the School will be open for the inspection of visitors.

The Dean (Professor Green) will attend at the School on Monday, October 1st, between the hours of 10 A.M. and 1 P.M., to receive Students and to furnish information relating to the courses of study.

The Professor of Chemistry and the Professor of Pharmaceutics will also be present to give advice with reference to their special subjects.

Full information will be found in the Prospectus of the School, application for which should be made to

**THE REGISTRAR OF THE PHARMACEUTICAL SOCIETY,***17 Bloomsbury Square, London, W.C.,*

who will also receive applications for admission to the School and the Fees.

For advice respecting the course of study to be pursued in particular cases, application should be made to

**THE DEAN OF THE SCHOOL OF PHARMACY,***17 Bloomsbury Square, London, W.C.*

The Benches in the Laboratories will be allotted, in the first instance, to those Students who enter for a Full Course, in the order in which they are applied for.

"SYSTEMA OMNIA VINCIT."

# **SOUTH LONDON**

## **School of Pharmacy**

(LIMITED),

**325 & 409 Kennington Road, London, S.E.**

ESTABLISHED 1868.

INCORPORATED 1887.

Dean of the School—Dr. **JOHN MUTER, F.R.S.E., F.I.C., F.C.S., &c.,**

Assisted by

**Mr. A. H. MITCHELL MUTER, F.I.C., F.C.S., &c., and a Staff of 4 Specialists.**

- 1.—The oldest-established Institution of its class.
- 2.—The largest staff, each subject being separately taught by a specialist thereof.
- 3.—Complete Chemical, Physical, and Biological laboratories.
- 4.—A fine Museum of Specimens continually renewed.
- 5.—A Pharmaceutical laboratory with steam plant and all appliances for manufacturing galenicals, with Dispensary attached.
- 6.—Thirty-two years' invariable success of its students at examination.
- 7.—Absolutely inclusive fees, covering use of books from library.

The Session 1900-1901 commenced on September 3, 1900, but Students can enter at any time up to October 1.

For new Syllabus and Calendar apply to the **SECRETARY OF THE SCHOOL, 325 Kennington Road, S.E.**

For advice as to the best course of study in special cases, personal application should be made to the Dean.

# THE WESTMINSTER COLLEGE OF CHEMISTRY AND PHARMACY, LIMITED.

Director ... Mr. GEORGE S. V. WILLS, F.L.S. (Lond.).

The Largest and Most Successful School in Great Britain.

The Course for the January Examination has just commenced.

## FEES

(Absolutely inclusive.)

### MINOR.

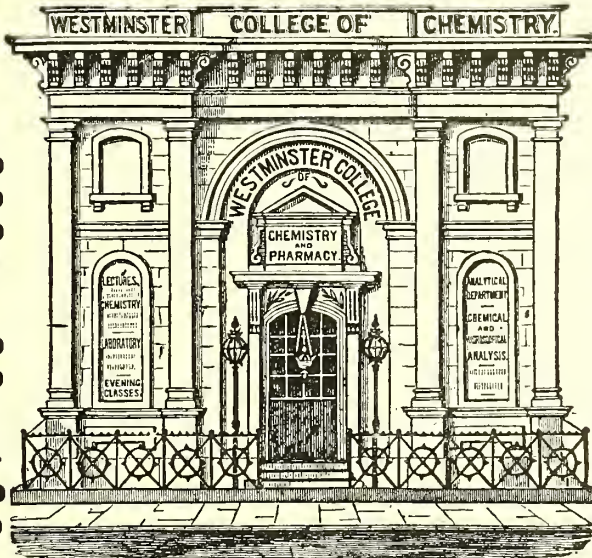
October Exam. ...	£3	3	0
January „ ...	10	10	0
Until Qualified ...	15	15	0

### MAJOR.

January Exam. ...	£6	6	0
Until Qualified ...	10	10	0

### Apothecaries' Hall.

October Exam. ...	£4	4	0
January „ ...	8	8	0



## EXTRACT FROM THE PRESS.

"The Lecture Hall is commodious and lofty, is thoroughly ventilated, and lighted by means of eight large windows in the roof. Everyone who has seen the College and its present equipment has pronounced the Laboratory to be the largest and best ventilated in London. We venture to say this College is one of the finest institutions of its kind." — *The Chemist's Assistant.*

Students who attend this College may rely upon receiving a thorough Pharmaceutical education, which will not only ensure success at their examination, but which will fit them for their professional calling in after life.

No greater proof of the thoroughness of the education can be given than the large number of Students who qualify from this College at each examination.

## THE INCLUSIVE TICKET (until Qualified).

The following are some of the advantages of the Inclusive Ticket:

1. It entitles the holder to attend College until he has passed the Minor Examination of the Pharmaceutical Society free of extra cost.
2. The Student can attend either the day or evening classes, or both.
3. It enables the holder to take a part-time situation if he chooses, and so save the cost of board and lodgings, which to many is a considerable item.

4. Everything possible is done to ensure the holder's success in the shortest possible period.

5. Mr. Wills pays half the Examination Fee (£5 5s.). See prospectus, page 1.

N.B.—Eight of the successful Students of this College were in part-time situations at the time of passing their examination in July.

## OCTOBER EXAMINATION.

N.B.—Students who are advanced in their studies, or who failed in July, should enter College at once, so as to ensure success at the October Examination. Special Tutorial Classes will be held by Mr. Wills.

**EVENING CLASSES**, every Tuesday and Thursday, from 7 till 9, for Major and Minor Students. For particulars see prospectus.

**EXAMINATION RESULT.**—During the past Session 118 Students were successful in passing their examinations from this School.

## WILLS'S UNIVERSAL POSTAL SYSTEM. Fee, £1 1s.

### EXTRACTS FROM THE PRESS.

"We have had an opportunity of inspecting the arrangements made at the Westminster College for carrying out this mode of instruction, and are not at all surprised that Mr. WILLS has the boldness to print on his prospectus, 'Success Guaranteed.' To an ardent, anxious pupil we believe there is a short cut from Westminster College to Bloomsbury Square, and that any Student can become a Pharmaceutical Chemist if he only Wills it." — *Mather's Illustrated Price Current.*

"The Postal System, which Mr. WILLS has introduced and carried out with the most complete success, is an extraordinary advantage to Pharmaceutical Students living in the country, as it tenders them an opportunity

of working at their own quarters, miles away from London, assisted by an efficient London master. We have visited Mr. WILLS' establishment, and, having thoroughly gone into every particular in connection with the working of the system, have much pleasure in recommending it. With the facilities Mr. WILLS has at command, we can scarcely wonder that his students pass without difficulty." — *The Magazine of Chemistry and Pharmacy.*

"The idea on which this system is based is to arrange for each Student his course of study for him, and to provide him generally with that matter which he needs to know." — *Chemist and Druggist.*

For New Prospectus and full particulars, &c., apply to Mr. J. E. WALDEN, Secretary, Trinity Sq., Borough, London.

# Metropolitan College of Pharmacy.

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Principal . . . W. WATSON WILL.

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## SESSIONS.

Winter :  
SEPTEMBER 1 to DECEMBER 31.

Spring :  
JANUARY 1 to APRIL 15.

Summer :  
APRIL 16 to JULY 24.

During each Session a complete Course of Lectures is delivered on all the subjects required for the Pharmaceutical Examinations. Students are advised to enter at the commencement of a Course to ensure success. Special subjects can be selected at the option of the Student. Hours of attendance, 9 A.M. to 6 P.M. All Students work under the direct supervision of the Principal and an efficient Staff of Demonstrators.

**In Equipment and Facilities for Study this Establishment is Unsurpassed  
in the Kingdom.**

## EXAMINATION RESULTS.

The number of M.C.P. Students who were successful in passing the Minor Examination during the Sessions 1897-98, 1898-99, and 1899-1900 constitute nearly **one-third** of the total pass in London.

SESSION 1899-1900 : MAJORS, 10 ; MINORS, 98. JULY : MAJORS, 3 ; MINORS, 37.

## SESSION 1900-1901.

The Lectures for this Session commence on SEPTEMBER 1st, and are arranged to cover the work for the January or ulterior Examinations. The Lecture commences at the foundation of each subject, and all the Student's work is so arranged that each works independent of his neighbour.

**FEES:**—Major Course, £8 8s.; Minor Course, £10 10s.

## EVENING CLASSES

For Major Students are held on Tuesdays, Wednesdays, and Fridays, the course extending from September 1st to the following July 24th. Hours, 7 p.m. to 10 p.m.

For Minor Students there are three courses similar to the Day courses; the classes are held on Mondays, Wednesdays, and Fridays. Hours, 7 p.m. to 9 p.m.

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For New Minor Syllabus, Illustrated Views, and full particulars, all communications should be addressed to the Secretary,

**WALTER S. CARVER, 160 & 162 KENNINGTON PARK ROAD, LONDON, S.E.**

# THE LONDON COLLEGE

. . Of Chemistry, Pharmacy, and Botany . .

HENRY WOOTTON, B.Sc. (Lond.) - Principal.

**NEXT TERM BEGINS ON SEPTEMBER 5, 1900.**

RESULTS—JULY, 1900: MAJOR, 3; MINOR, 24. PASS LIST WILL BE SENT ON APPLICATION.

SESSION, MAJOR, 6; MINOR, 75.



The London College.

**Lectures** delivered daily, at 10 a.m. and 3 p.m., on CHEMISTRY, PHYSICS, BOTANY, MATERIA MEDICA, and PHARMACY.

**Practical Work** in the CHEMICAL, PHARMACEUTICAL, and PHYSICAL LABORATORIES daily, 11 a.m. to 2 p.m. and 2 to 5 p.m.

**Tutorial Classes** daily at 4 p.m. (except Saturday).

The SPECIAL TUTORIAL CLASSES in the various subjects are held daily (in addition to the regular Lectures and Practical Work). For the purpose of these Classes, the Students are divided into groups of twelve. Every Student attends four Tutorial Classes during the week, and as in this way the Teachers ascertain the weak points of each Student, the system is practically equivalent to individual teaching.

## EVENING CLASSES

are held for Minor and Major Students

The South London Electric Railway from Moorgate Street, Bank, and London Bridge, have opened their new station in the Clapham Road, which is only one minute's walk from the London College.

Prospectus and further Particulars may be obtained on application to

THE SECRETARY, LONDON COLLEGE OF CHEMISTRY, 323 Clapham Road, LONDON, S.W.

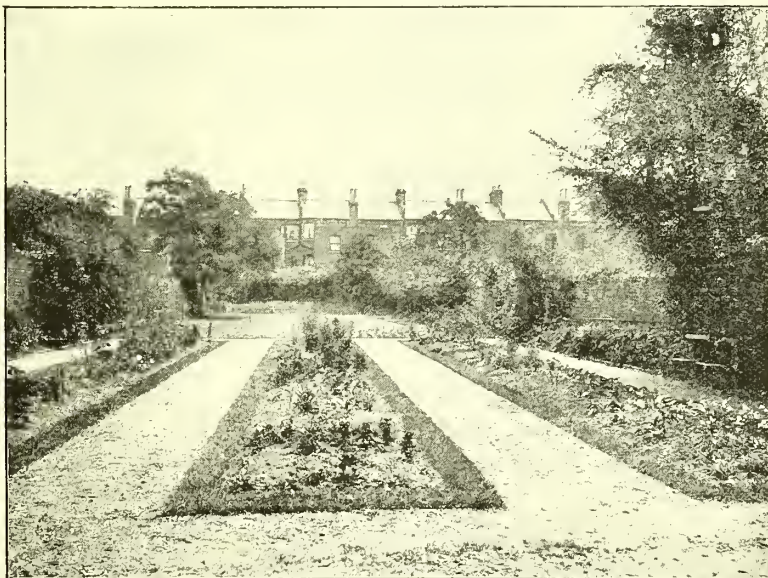
The COLLEGE BUILDINGS include roomy and completely fitted CHEMICAL, PHARMACEUTICAL, and PHYSICAL LABORATORIES, LECTURE HALL, MUSEUM, and CLASS ROOMS, LIGHTED THROUGHOUT BY ELECTRICITY. There are two large **Chemical Laboratories** on the ground floor, well ventilated and lighted. The Fittings are quite new, and of the most modern description, including three Fume Cupboards. Each Student has a separate commodious bench, fitted with gas, water, and sink, with large locker for apparatus.

The large **Lecture Hall** is roomy and excellently ventilated.

## THE BOTANIC GARDEN

is a special feature of the LONDON COLLEGE.

A quarter of an acre of ground is set apart for the cultivation of Medicinal and Herbaceous Plants.



London College Botanic Garden.

# IMPERIAL COLLEGE OF CHEMISTRY

49 & 51 IMPERIAL BUILDINGS, LUDGATE CIRCUS, E.C.

## PASS LISTS 1900.

### JANUARY PASS LISTS include—

MINOR—Messrs. A. J. FREEMAN, DUGDALE ROBINSON, &c. (first attempt) (who had not studied elsewhere).

Sandhurst: FIVE. | Apothecaries' Hall: THREE.  
Institute of Chemistry: TWO. | St. Peter's College: ONE.

**JULY RESULTS.**—Pharmaceutical:—Fifteen were successful from this College, including Messrs. FURBER, TROUGHTON, HARPER, &c., &c. (first attempt) (not studied elsewhere).

Institute of Chemistry:—Pharmacology, &c.—Messrs. ASTON, CATES, and JOLLYMAN.

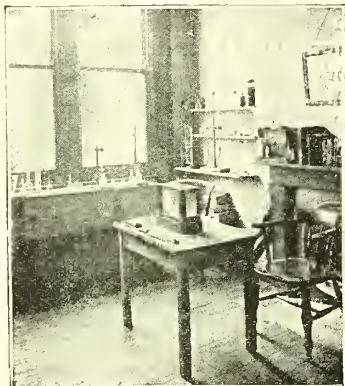
City of London College (City Polytechnic):—Chemistry—Messrs. TROUGHTON (1st place), EDWARDS, and JONES.

Botany—Messrs. TROUGHTON (1st place), EDWARDS, JONES, and PLUMMER.

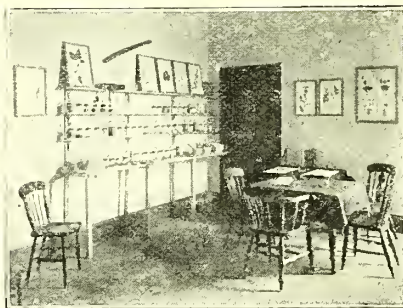
### APRIL MINOR RESULTS.

Twelve passed from this College, including Messrs. BERNARD BEER (first attempt), M. LEAKY FORD, both of whom had not studied elsewhere, &c., &c.

## WRITE FOR PROSPECTUS.



Principal—FREDERICK DAVIS.



This College was instituted in January, 1888, at 86 NEWINGTON CAUSEWAY. In 1890 larger premises were taken at 26 and 28 NEWINGTON CAUSEWAY; from here, in 1896, the College was transferred to a more central position, in IMPERIAL BUILDINGS, LUDGATE CIRCUS. Throughout, the purpose for which it was inaugurated has been maintained—namely, personal and individual instruction and supervision to the Students by the Principal. The phenomenal success which has met these efforts is well known; upwards of 80 per cent. of the Students pass the respective examinations.

### BOTANY—

Vegetable Physiology and Histology. Practical De Candolle and Linnaean Systems. When fresh Specimens are not obtainable, Bentley and Trimen's plates and Oliver's diagrams are used.

### CHEMISTRY—

Inorganic and Organic, including Modern Theories. In addition, Pharmaceutical Students are taken through every Chemical in the British Pharmacopoeia in detail, Alkaloids and Estimations, &c. Volumetric Analysis.

### MATERIA MEDICA—

Botanical and Zoological sources, natural orders, habitats, parts used, active principles, and preparations into which they enter.

### MICROSCOPY—

The parts of the Instrument explained. Section cutting, staining and mounting is demonstrated to the students.

### PHARMACY—

The British Pharmacopoeia is taken from beginning to end, and every point fully explained.

### DISPENSING—

Candidates for the Minor Examination so frequently fail in Practical Dispensing—owing to lack of proper training in this subject during their apprenticeship—that Mr. FREDERICK DAVIS has especially fitted a Pharmacy for practical instruction in this subject in the hope of obviating this high percentage of failures.

The Fees for Analytical Work and Scientific Evidence vary according to the nature of the work and the time occupied.

## A FEW UNSOLICITED EXPRESSIONS OF OPINION, 1900:

APRIL.—It is a source of great pleasure to me that I have passed the Minor at my first attempt, after only three months with you, and I have to thank you for your able tuition.  
BERNARD BEER.

Accept my best thanks for the success of my son at his examination,  
GILES FORD, M.D.

JULY.—Please accept my best thanks for the interest you have taken in my son's welfare. I am so thankful he succeeded in his examinations.  
J. TROUGHTON.

### PRESCRIPTIONS—

The grammar and general construction explained; illegible prescriptions, &c.

### METHOD OF TEACHING—

Lectures are delivered, and these are followed by questions and tutorial work; such a method not only ascertains the progress of the Student, but gives that facility of expression which so many candidates lack when under examination.

The theory followed minutely with practical work, and so going hand in hand, the Student gains a sound and thorough knowledge of the subjects impossible to obtain by any other means. Cram is strenuously avoided.

### PERIOD OF STUDY—

Students are advised to give at least six months previous to presenting themselves for the Minor Examination, but the ground may be covered in three months.

### HOURS OF STUDY—

Day Classes, 10 A.M. until 5 P.M.

Evening Classes, 5.30 P.M. until 8 P.M.

Special Private Tuition may be arranged for any desired subject.

### EVENING CLASSES

Are held on Monday, Tuesday, Thursday, and Friday.

### PHARMACEUTICAL COURSE, £10 10s.

Students are taken exclusively by Mr. DAVIS, and every effort is made to impart the requisite knowledge in such a manner that its lasting and sound character may be of paramount value to the Student in after life.

You will be pleased to hear that I succeeded in satisfying the Examiners. Of course I am delighted to have got through after so short a time with you, and feel that the success is due entirely to your admirable system of tuition. Furthermore, I never spent a more enjoyable three months than the past three have been. Instead of being the miserable grind I expected, your genial and friendly manner has smoothed over every difficulty and made a pleasure of work.

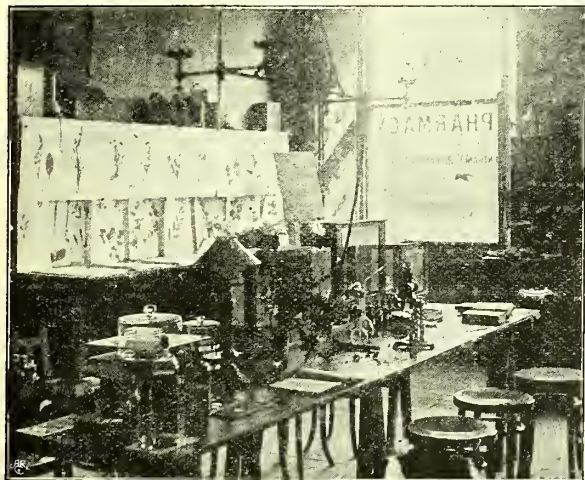
JOHN HARPER.

All communications to be addressed to Mr. FREDERICK DAVIS.

# THE CENTRAL SCHOOL OF PHARMACY

(ESTABLISHED 1895),

Principal: C. EDWARD SAGE, F.C.S., Ph.C.



This School has recently been removed to more convenient and central premises at

**2 CHARTERHOUSE ST., LONDON, E.C.**

(over 39 HOLBORN VIADUCT). It is within easy walking distance of any of the London railway termini, and omnibuses from all parts pass the doors.

The system of teaching which has been so successful at this school ensures personal tuition and individual attention for all students, and all the classes are limited to a definite number.

*No CENTRAL SCHOOL Students have failed to pass their qualifying examination this year.*

Next Day Course commences **October 1**, and Evening Classes commence **October 2**.

Students can begin practical work at any time, for each one works independently.

**FEES:**—Day Course (3 months), **£10 10s.**; Evening Course (3 nights weekly), **£4 4s.**

FOR FURTHER PARTICULARS APPLY TO—

**THE SECRETARY, CENTRAL SCHOOL OF PHARMACY, 2 CHARTERHOUSE ST., E.C.**

## Sheffield College of Pharmacy,

PRINCESS BUILDINGS, 118 THE MOOR, SHEFFIELD.

Principal - J. W. J. TURNER, Ph.C.

### List of Classes and Fees.

Monday, August 20.

Short Advanced Course for October Examination, Fee **£5**.

Monday, September 3.

Four Months' Course for January Exam., Fee **£10 10s.**

Monday, October 1.

Three Months' Course, **£8 8s.** Six Months', **£12 12s.**

Evening Classes on Wednesdays and Thursdays, 7-9 P.M.

*Particulars on application.*

## ROYAL (DICK) VETERINARY COLLEGE, EDINBURGH.

Trustees—The LORD PROVOST, MAGISTRATES, and TOWN COUNCIL OF EDINBURGH.

J. R. U. DEWAR, F.R.C.V.S., Principal.

Seventy-eighth Session commences **October 2nd, 1900.**

The Inaugural Address will be delivered on October 3rd by Sir JOHN GILMOUR, Bart., of Montrave.

For Prospectus apply to the Principal.

## NEW VETERINARY COLLEGE, EDINBURGH.

The 28th WINTER SESSION commences 3rd October.

PRINCIPAL:—W. WILLIAMS, F.R.S.E., F.R.C.V.S.

STAFF:—Professors HUNTER, F.R.C.P., F.R.A.S.; OWEN WILLIAMS, F.R.C.V.S., F.R.S.E.; A. DUFF DUNBAR, M.R.C.V.S.; IVISON MACADAM, F.L.C., F.R.S.E.; MACDOUGALL, D.Sc., M.A.; SHENNON, M.D., F.R.S.E.; CARPENTER, M.R.C.V.S.

Prospectuses on application to the Secretary.

**NOTE.**—Graduates of this College have this year gained the two first Fitzwygram Prizes, in a Competition open to the Graduates of all the Veterinary Colleges in Great Britain.

## QUEEN'S COLLEGE, CORK.

Faculty of Medicine.

### PROFESSORS.

Anatomy and Physiology—J. J. Charles, M.A., D.Sc., M.D., M.Ch.

Practice of Medicine—William E. Ashley Cummins, M.D.

Surgery—C. Yelverton Pearson, M.D., M.Ch., F.R.C.S.

Materia Medica—John Dundon, M.B., B.Ch., B.A.O., F.R.C.S.I.

Midwifery—Henry Corby, B.A., M.D., M.Ch.

Chemistry and Practical Chemistry—Augustus E. Dixon, M.D.

Zoology and Botany—Marcus M. Hartog, M.A., D.Sc., F.L.S.

Natural Philosophy—William Bergin, M.A.

Modern Languages—William F. T. Butler, M.A.

Logic—George J. Stokes, M.A.

Practical Anatomy—By the Professor, assisted by the Demonstrator.

### LECTURERS.

Medical Jurisprudence—C. Yelverton Pearson, M.D., M.Ch., F.R.C.S.

Pathology—Arthur E. Moore, M.B., B.Ch., B.A.O.

Ophthalmology and Otology—Arthur W. Sandford, M.D., M.Ch.

Hygiene—Deus D. Donovan, L.R.C.P. and S.E.

The Lectures will commence on October 22nd. Nine Scholarships will be awarded to Students in Medicine, if qualified, viz.: Two Junior Scholarships of Twenty-five Pounds each, to Students commencing their First, Second, Third, and Fourth years, and the Blayney scholarship for students of the Fifth year. A Senior Exhibition will also be offered for competition to Students of the Fifth year. The Examinations for Scholarships will begin on Thursday, October 18.

Clinical Medicine and Surgery at the North and South Infirmarys and Clinical Midwifery at the Lying-in Hospital.

The Medical Buildings have been considerably enlarged by the addition of a Lecture Room, Laboratory, and Museum for the Materia Medica, and Medical Jurisprudence, and Practical Pathology Classes, by the extension to double its size of the Dissecting Room, and by the addition of a large Anatomical and Pathological Museum.

A Special Course of Practical Chemistry for Pharmaceutical Students has been arranged to meet the requirements of the Pharmaceutical Society. Pharmaceutical Students can also attend the Courses of Lectures on Botany and Materia Medica.

Further information can be obtained in the Calendar, or on application to the Registrar.

By Order of the President,

ALEX. JACK, M.A., Registrar.

# THE Manchester College of Pharmacy

225A & 227A OXFORD STREET, MANCHESTER.

**Director - Mr. CHAS. TURNER, F.C.S.**  
**PHARMACEUTICAL CHEMIST.**

**THE MANCHESTER COLLEGE OF PHARMACY** was established in 1882, at a time when there was a great need of a centre of high-class pharmaceutical education in the district, and the high position which the institution now holds is shown, not only by the pass lists, but also in the praise the Students frequently obtain in the examination room, and by the responsible positions many of them now occupy.

**The System** employed in all departments is a combination of lectures and demonstrations with class work, combining the advantages of both and avoiding their defects. Every subject is taught *practically*; every possible experiment in organic and inorganic chemistry, in pharmacy, dispensing and physics is performed by the Students themselves, whilst in Botany and Microscopy supplies of fresh specimens are dissected by the Students, and the collections of all descriptions are freely used.

**A SIX MONTHS' COURSE FOR THE APRIL EXAMINATIONS WILL BEGIN ON OCTOBER 1.**

**The Full-Time Class** works from 9.30 A.M. to 4.30 P.M. every week-day, except Saturdays, which are half-holidays.

The year's work is divided into the following Courses:—

**October to the April Examination - Fee £14 14s.**

**January to the July Examination - Fee £14 14s.**

**August to the January Examination - Fee £11 11s.**

In addition to these Main Courses, there are Short Courses for advanced Students for all Examinations, commencing three months before the respective Examinations, and covering the subjects twice. The Final Course for each Examination begins about six weeks before the published date of that Examination.

**The Afternoon Class** works on Tuesdays only from 2 P.M. to 10 P.M. Fee, January to July, **£4 4s.** August to Christmas, **£3 3s.**

**The Evening Class** meets on Mondays, Wednesdays, and Fridays, from 8 P.M. to 10 P.M. Fees as in the Afternoon Class.

**The Major Class** works from 9.30 A.M. to 4.30 P.M. every week-day except Saturdays, which are half-holidays. Fee for Three Months' Course, **£6 6s.**

**Limelight Lantern Lectures** are delivered every Saturday morning from 9.30 to 10.30, and on alternate Tuesday evenings from 7 to 8.

**Additional Chemical Lectures** are given from 7 to 8 on alternate Tuesday evenings, and from 6.30 to 7.30 on Wednesday evenings. These are open free to all Students of the M.C.P.

**Students** under 20 in the Afternoon and Evening Classes pay two-thirds of the fees. All Students of the M.C.P. will be given a ticket of admittance to the Royal Botanical Gardens at Old Trafford.

**Private Revision Classes** for not more than five Students are held on Thursday evenings from 7 to 9. Fee, **10s. 6d.** per month.

**Full Particulars** sent post free on application.

# NORTHERN COLLEGE

OF PHARMACY,

**Burlington Street, MANCHESTER.**

~~~~~  
**Principals** { **Mr. GEO. CLAYTON, F.C.S., Ph.C.**  
**Mr. F. LAWSON, B.Sc.(Lond.), Ph.C.**  
~~~~~

The course of training is most sound and thorough, embracing every detail of the examination schedules, the time-tables being so arranged that the student is able to utilise every moment he is at College to the greatest advantage.

The **Theoretical Instruction** in the Lecture or Class Rooms is illustrated by Lantern Views, Experiment, and other forms of demonstration. During the three months' course there are delivered 78 Lectures on Chemistry and Physics, 65 on Botany, 65 on Materia Medica, 52 on Pharmacy, 34 on Prescription Reading, Pharmacy Law, Poison Regulations, &c., each Lecture being preceded by a searching revision class. The **Practical Training** in Laboratories and Dispensary is thorough and comprehensive, each student receiving personal attention.

A conclusive proof of the character of the curriculum being shown by the fact that over **Fifty per cent. of Northern College** men pass at their **First Attempt**. During the past 15 months **Seventy-five** gentlemen have passed Minor or Major Examinations.

Prospectus, with full particulars of the various courses, &c., posted to any address.

## BOOKS FOR THE MINOR.

~~~~~

**QUALITATIVE ANALYSIS**

BY

**GEO. CLAYTON, F.C.S., Ph.C.**

**VOLUMETRIC ANALYSIS**

BY

**FREDK. LAWSON, B.Sc., Ph.C.**

These two books cover the whole of the Practical Chemistry required for the Minor.

Post Free 2/- each.

# THE EDINBURGH Central School of Pharmacy,

26 CLYDE ST., EDINBURGH.

**Principal : WM. B. COWIE, Pharmaceutical Chemist**

FIRST PRIZEMAN (CHEMISTRY) HERIOT-WATT COLLEGE,

FIRST PRIZEMAN (BOTANY) EDINBURGH SCHOOL OF MEDICINE,

ASSISTED BY COMPETENT DEMONSTRATORS.

During the past eighteen months the following SEVENTY-TWO Students have qualified from this School:—

|                   |                     |                      |                     |                  |                    |
|-------------------|---------------------|----------------------|---------------------|------------------|--------------------|
| Miss Andrews      | Mr. F. Cooper       | Mr. Wm. Findlay      | Mr. H. H. Husbands  | Mr. J. Park      | Mr. A. Skinner     |
| " Blyth           | " Wm. Cowie         | " J. M. Foote        | " A. Kelly          | " W. S. Parker   | " J. Skinner       |
| Mr. F. Aitken     | " T. Cox            | " R. P. Forsyth      | " G. A. Lee         | " R. S. Paterson | " O. Stewart       |
| " J. Baillie      | " J. Davidson       | " J. Fraser          | " C. S. S. McDonald | " A. Pirie       | " R. Thompson      |
| " J. Barrie       | " F. Dawson         | " O. S. Geddes       | " Wm. McEwen        | " W. S. Ramsay   | " T. Thompson      |
| " J. A. Bayes     | " A. Deans          | " J. Geddes          | " A. McSween        | " A. W. Ritchie  | " W. J. Tolmie     |
| " Wm. Beveridge   | " O. J. Dixon       | " S. O. Halliday     | " Wm. Meldrum       | " Wm. Robertson  | " J. T. Tully      |
| " F. Booth        | " D. D. Duncan      | " C. Hare            | " A. E. Melling     | " Wm. Russell    | " A. Turnbull      |
| " J. R. Y. Bowman | " H. Duncan         | " J. D. Harvey       | " F. Melrose        | " J. Rutherford  | " H. West          |
| " A. Brown        | " T. England        | " J. H. Heap         | " Wm. Mercer        | " P. Scott       | " D. Whately       |
| " N. Brown        | " J. H. Farquharson | " A. Hershberg       | " J. Nimmo          | " J. Sharp       | " J. A. Williamson |
| " J. Carnegie     | " J. D. Fergusson   | " J. R. Hetherington | " E. D. Owen        | " J. F. Simpson  | " Wm. Wilson       |

**Fifty of these Passed at their First Attempt.**

**Next Full Course (Day-classes) commences on OCTOBER 3rd.**

INTENDING STUDENTS ARE REQUESTED TO APPLY EARLY FOR BENCHES AS ONLY A FEW ARE VACANT.

For Prospectus and advice respecting the Course of Study, apply to

**WM. B. COWIE, 26 Clyde Street, Edinburgh.**

# THE ROYAL DISPENSARY

— AND —

## SCHOOL OF PHARMACY OF EDINBURGH.

Teacher—Mr. WILLIAM DUNCAN, Pharmaceutical Chemist.

Assisted by Messrs. W. G. MACKENZIE, C. M. GERMAN, & GILBERT SIMPSON, Pharmaceutical Chemists.

The Laboratories and Class Rooms are very complete, having been specially built and fitted for the teaching of Pharmaceutical Students.

**TERMS BEGIN OCTOBER, JANUARY, and APRIL.**

During the past two years—July 1898 to July 1900—the following One Hundred and Forty-seven Students have qualified from this School:—

|                     |                   |                      |                   |                    |                   |
|---------------------|-------------------|----------------------|-------------------|--------------------|-------------------|
| Mr. W. P. Adamson   | Mr. J. R. Craig   | Mr. H. O. Hedger     | Mr. J. Martin     | Mr. A. Riley       | Mr. E. G. Thomas  |
| " J. W. W. Allison  | " T. Cousin       | " G. G. Hill         | " P. Mason        | " J. Roberts       | " G. Thomson      |
| " A. Anderson       | " C. E. Dalton    | " R. Hird            | " E. Michelson    | " C. Robertson     | " W. Tipper       |
| " H. R. Anderson    | " T. J. Davies    | " R. M. Hume         | " L. P. Michie    | " J. Robinson      | " B. A. M. Todd   |
| " D. S. M. Anderson | " D. M. Dick      | " A. Inglis          | " E. L. Middleton | " W. T. Rohson     | " A. M. Trall     |
| " J. T. Appleton    | " J. Dowell       | " A. L. Jackson      | " W. R. Milligan  | " A. Ross          | " L. B. Traub     |
| " A. T. Bailes      | " W. B. Drummond  | " O. H. Jackson      | " J. Mitchell     | " J. Ross          | " D. Turner       |
| " J. Barclay        | " W. B. Duncan    | " R. Jackson         | " W. D. Mitchell  | " G. Shearer       | " A. Urwin        |
| " J. A. Barlow      | " R. Dunneire     | " M. Jamieson        | " W. G. Mitchell  | " W. Spence        | " G. R. Wadsworth |
| " A. Bate           | " F. Ellis        | " R. A. Johnstone    | " W. Morrison     | " H. E. Spencer    | " H. Walker       |
| " F. Bæcroft        | " A. Fairhairn    | " R. Keir            | " A. Nicholson    | " A. M. Smith      | " T. Walker       |
| " W. W. Bell        | " J. G. Ferrier   | " W. Kennedy         | " T. Nicoll       | " H. Smith         | " R. S. Waters    |
| " A. Bertram        | " J. P. Ferrier   | " Miss J. S. Kermath | " W. Nimmo        | " R. Smith         | " D. Watt         |
| " T. O. Binks       | " A. Findlay      | " Mr. A. J. Kerrison | " T. O. Owens     | " T. C. Smith      | " A. Weir         |
| " W. O. Blake       | " J. Finlay       | " J. A. Lawrie       | " D. S. Park      | " A. R. Stewart    | " E. A. Whaley    |
| " J. Boulton        | " A. Forrester    | " D. A. Leadbetter   | " J. R. Parry     | " F. G. Stewart    | " C. Wherley      |
| " W. S. Boyack      | " W. Fotheringham | " H. Leggott         | " D. L. Petrie    | " R. G. Strachan   | " J. E. Whitaker  |
| " J. C. Brewis      | " P. H. Gamlen    | " T. A. Little       | " G. Philp        | " J. S. Swanson    | " A. Whitehead    |
| " A. P. Brown       | " W. Gibo         | " J. G. Low          | " H. C. Prince    | " A. W. Taggart    | " J. H. Wilford   |
| " E. J. Brown       | " J. Gilmour      | " A. MacDonald       | " W. J. Purves    | " C. J. A. Taggart | " J. J. Williams  |
| " J. Brown          | " F. F. Graham    | " R. McDonald        | " A. C. Pycroft   | " J. Tait          | " R. Wilson       |
| " H. W. Cammell     | " P. Grant        | " A. McHarg          | " G. Quin         | " A. L. Taylor     | " W. H. Wilson    |
| " A. Chalmers       | " L. H. Hall      | " A. McMillan        | " W. A. Ramsay    | " J. E. B. Taylor  | " W. M. Withers   |
| " J. K. Chew        | " A. E. Hardern   | " G. Mack            | " V. R. Raywood   | " S. Taylor        | " S. R. Wood      |
| " T. C. Clegg       | " G. W. Hay       |                      |                   |                    | " C. Young        |

Early application for Benches, &c., to be made to

**Mr. WILLIAM DUNCAN, F.C.S., The Royal Dispensary,  
21 West Richmond Street, EDINBURGH.**

# Glasgow School of Pharmacy

BLYTHSWOOD CHAMBERS,

**180 West Regent St., GLASGOW.**

Principal - - **JOHN LOTHIAN**, Pharmaceutical Chemist,  
*Medallist of the Pharmaceutical Society, &c.*

Assistants : { **BERTRAM COCKBURN**, Pharmaceutical Chemist.  
**HENRY RODWELL**, M.P.S., Kinninmont Gold Medallist.

## SESSION 1900-1901.

The handsome and commodious premises comprise Chemical, Botanical, and Pharmaceutical Laboratories, Balance Room, and Lecture Rooms, and are specially fitted up to meet the requirements of Pharmaceutical Students, no effort having been spared to render the Glasgow School of Pharmacy one of the finest and best equipped in the United Kingdom.

The Laboratories are of the most modern construction, spacious, well-lighted, and ventilated, provided with fume chambers, and replete with all the latest Chemical and Pharmaceutical apparatus.

The Lecture Rooms are furnished with several complete sets of Materia Medica and Herbarium Specimens, Chemical and Botanical Diagrams, Autograph Prescriptions, Ores, &c.

The system of instruction has been specially devised to provide Students of Pharmacy with a thorough scientific training in the various subjects of Examination.

At the **JANUARY** Minor Examination, held in Edinburgh, out of **EIGHTEEN** Students who presented themselves, **FOURTEEN** were successful; at the **JULY** Minor Examination **THIRTEEN** Students were successful, **ELEVEN** of whom passed at their first attempt.

**100 Students have Passed the Minor and Major Examinations during the past three Sessions.**

The **KINNINMONT GOLD MEDAL** has been awarded, for the fourth year in succession, to a Student of the Glasgow School of Pharmacy, **JAMES PINKERTON GILMOUR**, Victoria Infirmary, Glasgow.

**WINTER SESSION COMMENCES OCTOBER 1, 1900.**

NEW PROSPECTUS ON APPLICATION.

| **JOHN LOTHIAN**, Principal.

# NORTH OF ENGLAND SCHOOL OF CHEMISTRY AND PHARMACY

55 NORTHUMBERLAND ST., NEWCASTLE-ON-TYNE.

Principal ... .. Mr. F. R. DUDDERIDGE, Ph.C., F.C.S.,

*Medallist in Chemistry, Pharmacy, and Materia Medica at South London School of Pharmacy (Muter's), 1890-91,*

**ASSISTED BY EXPERIENCED DEMONSTRATORS.**

**DAY, EVENING, and PART-TIME CLASSES** for all the Pharmaceutical Examinations.

Students may depend upon receiving **personal attention** and **thorough tuition**.

The **LABORATORIES** and **LECTURE-ROOM** have been pronounced by all who have seen them to be **second to none in the kingdom**, and are **fully equipped** with **every requisite** for teaching the various subjects. Each Student is provided **free of charge** with all necessary apparatus.

**JULY RESULTS:**—Mr. T. R. Ferry, Wallsend; Messrs. R. S. Briggs, J. W. Patterson, and A. Stewardson, Newcastle. Three of these gentlemen qualified at their *first attempt*.

**THE WINTER SESSION COMMENCES MONDAY, 1st OCTOBER.**

Intending Students are requested to make early application for Benches. Prospectus, giving particulars, post free to any address.

Recent successes include Students from Alnwick, Backworth, Bedlington, Choppington, Durham, Gateshead, Medomsley, Morpeth, Newcastle, New Benwell, New Shildon, North Shields, Redcar, Rothbury, Seabam Harbour, Sedgefield, South Shields, Thirsk, Tynemouth, West Hartlepool, Whitby, and Whitley Bay.

## WEST OF SCOTLAND COLLEGE OF PHARMACY, 157 ST. VINCENT STREET, GLASGOW.

PRINCIPAL .. .. T. S. BARRIE, Ph.C., &c  
Assisted by JAS. THOMSON, M.P.S., and THOMAS MACDOUGALL, M.A.

**The MOST SUCCESSFUL in SCOTLAND, WITHOUT EXCEPTION.**

LOOK AT THESE FIGURES:

At the latest (April) **Preliminary** we entered 5 Students, and all passed, **100** per cent. against **47** per cent. for the rest of Scotland

At the last **Major** (July) Examination we again passed **100** per cent. against **0** for the rest of Scotland.

At the two last **Minor** (April and July) Examinations we passed **12** out of 20 presented, **60** per cent., against **31** per cent. for the rest of Scotland.

OF **18** SUCCESSES, **10** PASSED AT THE FIRST ATTEMPT.

The College resumes on October 2nd, when Mr. BARRIE will deliver the opening lecture. The Preliminary Class has this week been resumed under Mr. MACDOUGALL, M.A., who was so successful last session.

**PROSPECTUS, PASS LIST, AND ALL PARTICULARS ON APPLICATION.**

## SCHOOL OF PHARMACY,

12 KNOWLE ROAD, BRIXTON, LONDON.

Principal - Dr. A. B. GRIFFITHS, F.R.S. (Ed.), F.C.S.

Thorough tuition in all subjects for Minor, Major, and Hall Examinations. Medals awarded to successful pupils. Terms moderate and inclusive.

A Student writes: "*Had I come to you at first instead of going to \* \*, I should have been through twelve months ago.*"

The **best** of appliances (balances, microscopes, botanical specimens, &c.).

Coaching a special feature at this School.

Recent successes—80, 85 and 100 per cent. passed.

Individual attention. Success guaranteed.

New Term, September 3rd.

## PHARMACEUTICAL TEACHING.

**MR. CARSON**

Teaches and prepares for the Minor and Major Examinations at

10 Avonmore Gardens, Avonmore Road, West Kensington

**FEE, 18/- to 40/- per Month.**

T. G. DAVY, M.A., M.R.C.S., M.D., Oxon., says:—"As a coach (I) consider it would be difficult to find his equal."

## THE PRELIMINARY.

The teaching for this is done by

**Mr. W. H. JACKSON, M.A.**

**FEE, 18/- to 40/- per Month.**

# THE LIVERPOOL SCHOOL OF PHARMACY

6 Sandon Terrace, Upper Duke St., LIVERPOOL.

Principal—R. C. COWLEY, Ph.Ch., Analytical and Consulting Chemist,  
Assisted by Able Demonstrators.

This School is officially recommended by the Liverpool Chemists' Association, who have appointed a Committee of Education to visit the School and superintend the Course of Study.

## SYNOPSIS OF CLASSES.

**DAY CLASSES.**—The Winter Course begins on the 10th of September. The Spring Course begins the first week in January. The Summer Course begins the first week in April.

**EVENING CLASSES.**—A Class is held on Tuesday Evening, commencing at 6.30, for advanced "Minor" Students. Wednesday Evening Classes are held for beginners, commencing at 6 p.m.

**To secure Benches, intending Students should notify the Principal at an early date.**

*NOTE.*—50 per cent. of the Candidates from this School passed at the July Examination; also, that the Pharmaceutical Society's Silver Medal was won by a Liverpool Student this year.

**THE SYLLABUS** for the forthcoming Session, apart from giving a Synopsis of Classes, will contain a quantity of information relating to **VOLUMETRIC ANALYSIS**, such as **EQUATIONS**, **MOLECULAR WEIGHTS**, &c. All Students intending to enter for their examination during the next Session should write for one.

# LEEDS COLLEGE OF PHARMACY

PRINCIPAL: F. PILKINGTON SARGEANT, F.C.S.,  
PHARMACEUTICAL CHEMIST.

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During the past Sessions Students have been successfully prepared for examinations connected with the Pharmaceutical Society, Cape Pharmacy Board, the Society of Apothecaries, and the London, Cambridge, and Victoria Universities.

Colonial Students may enter for a course of study in preparation for the "Minor," or for the examinations held in connection with the Pharmacy Boards of the respective Colonies. Particulars regarding Colonial examinations may be had on application.

**CLASSES ARE FULL THIS TERM.**

**NEXT COURSE COMMENCES OCTOBER 9.**

THE FEES FOR THE COURSES ARE:

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Principal—H. J. MAOKINDER, M.A.  
Vice-Principal—W. M. CHILDS, M.A.

## School of Pharmacy.

Director of Pharmaceutical Studies—C. M. LUXMOORE, D.Sc.,  
F.I.O., Research Fellow and Medallist of the Pharmaceutical Society.

### Lecturers.

Physics—G. J. BUROH, M.A., F.R.S.  
Chemistry—O. M. LUXMOORE, D.Sc., F.I.O.  
Botany—PERCY GROOM, M.A., F.L.S.  
Pharmacognosy—B. J. AUSTIN, F.L.S.  
Pharmacy—J. L. E. DRUGMAN, Ph.D.

THE SCHOOL OF PHARMACY OF READING COLLEGE has been established to provide a course of scientific instruction suitable for Pharmaceutical Students.

The subjects of study are those comprised in the Syllabuses of the Minor and Major Examinations of the Pharmaceutical Society—namely, Chemistry, Physics, Botany, Pharmacognosy, Pharmacy, Dispensing, and Prescription Reading. Lectures, demonstrations, practical laboratory work, and tutorial classes are organised with the view of ensuring, as far as possible, the success of Students on presenting themselves for examination, and of equipping them with the sound scientific training requisite for their future career as Pharmacists.

The College Session 1900-1 commences on  
Thursday, October 4th, 1900.

A Prospectus giving full particulars of the School of Pharmacy can be had post free. The College Calendar, containing syllabuses of the Courses of Study in Letters and Sciences, Agriculture, Fine and Applied Art, Music, and Commercial Subjects can be had post free, One Shilling.

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## THE LONDON HOSPITAL MEDICAL COLLEGE

THE WINTER SESSION COMMENCES ON OCTOBER 1.

THE ANNUAL DINNER will be HELD in the COLLEGE LIBRARY on Monday, OCTOBER 1, DR. GILBERT SMITH in the Chair.

The Hospital is the largest in the kingdom; nearly 600 beds are in constant use, and no beds are closed. Being the only general hospital for East London—i.e., for a million and a half people—the practice is immense. In-patients last year, 13,284; out-patients, 189,638; accidents, 20,068; major operations, 2,508.

APPOINTMENTS.—Owing to the enormous number of patients, more appointments, salaried and resident, are open to students than at any other hospital. Sixty qualified appointments are made annually, and more than 150 Dressers, Clinical Clerks, &c., appointed every three months. All are free to students of the Coll. ge. Holders of resident appointments have free board.

SCHOLARSHIPS AND PRIZES.—Thirty-four Scholarships and Prizes are given annually. Seven Entrance Scholarships will be offered in September.

SPECIAL CLASSES are held for the University of London and other higher Examinations. Special entries for Medical and Surgical Practice can be made. Qualified practitioners will find excellent opportunities for studying the rarest diseases.

A reduction of 15 guineas is made to the sons of members of the profession.

ENLARGEMENT OF THE COLLEGE.—The new laboratories and class-rooms for Bacteriology, Public Health, Operative Surgery, Chemistry, Biology, &c., and the New Clubs Union Rooms, are now in full use.

The Clubs Union Athletic Ground is within easy reach of the Hospital.

Luncheons and dinners at moderate charges can be obtained at the Students' Club. The Metropolitan and other railways have stations close to the Hospital and College.

For prospectus and information as to residence, &c., apply personally, or by letter to

5 Mile End, E.

MUNRO SCOTT, Warden.

## NATIONAL DENTAL HOSPITAL AND COLLEGE,

GREAT PORTLAND STREET, W.

President—H.R.H. THE DUKE OF YORK, K.G.

THE WINTER SESSION 1900-1901 will commence on Monday, Oct. 1st. The accommodation and fittings are in accordance with the latest requirements for efficient teaching in all branches of the Science and Art of Dental Surgery.

The Stopping Room, with space for sixty chairs, is well lighted and warmed and ventilated after approved methods.

Other large rooms are arranged as a Mechanical Laboratory, Special Demonstration Room, Students' Common Room, &c.

There are also a Metallurgical Laboratory, Library, and Museum. The Waiting Rooms, Extraction Rooms, and Lecture Hall are on the ground floor.

The Building is lighted throughout by electricity, and there is also a current for motors in the Stopping Room.

Each Student on entering the School passes through a preliminary course under the care of a Demonstrator, and all the members of the Staff take part in chair-side teaching. The Medical Tutors assist Students before each examination of the R.O.S.

The Calendar, containing full information as to Lectures, Fees, Prizes, and an ENTRANCE EXHIBITION, will be sent on application.

SIDNEY SPOKES, Dean.

## THE MIDDLESEX HOSPITAL MEDICAL SCHOOL.

THE WINTER SESSION WILL OPEN ON MONDAY,

OCTOBER 1st, at 3 P.M. T. OLIFFORD ALBUTT, Esq., M.D., F.R.C.P., F.R.S., Regius Professor of Physic in the University of Cambridge, will distribute the prizes gained during the previous year, and deliver an Address. The ANNUAL DINNER of the Past and Present Students and their friends will take place the same evening at the Trocadero, at 7 o'clock, Mr. W. LANG, F.R.C.S., in the Chair.

### HOSPITAL STAFF AND LECTURERS.

Consulting Physicians—Dr. S. Coupland, Sir R. Douglas Powell, Bart., M.D. Physicians—Dr. Cayley, Dr. J. K. Fowler, Dr. W. Pasteur.

Assistant Physicians—Dr. W. E. Wynter, Dr. A. F. Voelcker, Dr. F. J. Wethered, Dr. H. C. Thomson.

Obstetric Physician—Dr. W. Duncan.

Assistant Obstetric Physician—Dr. R. Boxall.

Consulting Physician to the Skin Department—Dr. Robert Liveing.

Physician to the Skin Department—Dr. J. J. Pringle.

Consulting Surgeons—Mr. Nunn, Mr. George Lawson.

Surgeons—Mr. Henry Morris, Mr. Andrew Clark, Mr. A. Pearce Gould.

Assistant Surgeons—Mr. J. Bland-Sutton, Mr. John Murray, and Mr. T. H. Kellock.

Ophthalmic Surgeon—Mr. William Lang.

Aural Surgeon—Mr. Stephen Paget.

Consulting Dental Surgeon—Mr. J. S. Turner

Dental Surgeon—Mr. W. Hern.

Assistant Dental Surgeon—Mr. W. S. Nowell.

Other Lecturers—Dr. Robinson, Dr. Young, Dr. Kellas, Dr. W. J. Mickle, Dr. Crombie, Mr. A. G. R. Foulerton.

The Hospital contains 320 Beds. There are Special Departments for Cancer, Syphilis, Diseases of Women and Children, Diseases of the Eye, Skin, Throat and Ear, and for cases requiring Electrical treatment.

There are eighteen Resident Clinical Appointments open to Students of the Hospital annually.

Two Open Entrance Scholarships, value £100 and £60, will be competed for on September 25th, 26th, and 27th, and one Entrance Scholarship (value £60) in Anatomy and Physiology, open to Oxford and Cambridge Students only, on September 25th and 26th. Notice in writing to be sent to the Dean on or before September 18th.

Composition Fee 155 guineas, or by three yearly instalments of 60 guineas, 50 guineas, and 35 guineas.

Special terms are made in favour of University and other Students who have already commenced their medical studies and of University of London Students who have passed the Preliminary Scientific Examination.

The new School Buildings, which provide large and fully-equipped Laboratories for Physiology, Pathology, and Bacteriology, as well as a new Dissecting room and Chemical department, are now in regular use.

The Residential College adjoining the Hospital provides accommodation for thirty Students.

For further information, apply to

W. PASTEUR, M.D., Dean.

## OWENS COLLEGE, MANCHESTER. PHARMACEUTICAL DEPARTMENT.

DEAN.—Professor ALFRED H. YOUNG, M.B., F.R.C.S.

PROFESSORS AND LECTURERS.—*Chemistry*—Professor Harold B. Dixon, M.A., F.R.S. *Organic Chemistry*—Professor W. H. Perkin, Ph.D., F.R.S. *Botany*—Professor F. E. Weiss, B.Sc.; Assistant Lecturer, O. V. Darbishire, B.A., Ph.D. *Physics*—Professor A. Schuster, Ph.D., F.R.S. *Maternal Medicine and Therapeutics*—Professor

Pharmacognosy, William Kirkby. *Pharmacy and Pharmaceutical Chemistry*—Assistant Lecturer, J. Grier.

The Prospectus of the Pharmaceutical Classes is now ready.

The curriculum for Students qualifying for the Minor and Major Examinations of the Pharmaceutical Society includes *Chemistry, Botany, Pharmacognosy, Physics, Pharmacy, Pharmacy Law*

An Entrance Exhibition of the value of £10 will be offered to the competition of Students entering for the full course in October (subjects—Elementary Chemistry and Botany), and a prize of £5 is awarded on the results of the examination of the First Year's Course at the end of the Summer Session.

For all Particulars apply to SYDNEY CHAFFERS, Registrar.

## GOLDSMITHS' INSTITUTE, NEW CROSS, S.E.

### DEPARTMENT OF CHEMISTRY.

Evening Classes, providing complete Courses of Instruction in various branches of Pure and Applied Chemistry, are held at this Institute under the direction of Mr. William Jackson Pope, F.I.C., &c. The Courses of Lectures and Practical Laboratory teaching are suitable for students desiring to qualify in Chemistry at the Examinations of the London University, the Pharmaceutical Society, the Board of Education, and other public bodies. The equipment of the Chemical Laboratories has been recently considerably augmented, and exceptional facilities are offered to advanced students who desire to engage in Chemical Research work during the day or evening. The New Session commences on September 24. For further particulars apply to the Secretary,

J. S. REDMAYNE, B.A., Secretary.

## UNIVERSITY COLLEGE, BRISTOL. FACULTY OF MEDICINE.

THE WINTER SESSION will commence on Monday, October 1st.

This College is the only Institution in the West of England which provides a complete Medical Curriculum.

The lectures and instruction given in the Faculty of Arts and Science of University College, Bristol, are adapted to the Matriculation Examination of the University of London, and to the Preliminary Examination of the College of Preceptors, and also to the Preliminary Scientific Examination of the University of London; and Students can complete in Bristol the entire course of study required for the Medical and Surgical Degrees of the University of London, the Diplomas of the Royal College of Physicians of London and the Royal College of Surgeons of England, and of the Apothecaries' Society of London, and for the Examinations of the Army and Navy Boards.

A complete Dental Curriculum is also provided.

It is now arranged that Students of the College shall be admitted to the clinical practice of the Bristol Royal Infirmary and the Bristol General Hospital conjointly, and consequently both these institutions are open to all Students.

The Infirmary and the Hospital comprise between them a total of 470 beds; and both have very extensive Out-patient Departments, Special Departments for the Diseases of Women and Children, and of the Eye, Ear, and Throat, besides large Out-door Maternity Departments, and Dental Departments.

Students of the College also have the privilege of attending the practice of the Bristol Royal Hospital for Sick Children and Women, containing 104 beds, and that of the Bristol Eye Hospital, with 28 beds. The total number of beds available for Clinical Instruction is therefore 602.

Fever Hospital Practice is attended at the Hospitals for Infectious Diseases, of the Sanitary Authority of the Corporation of Bristol; and Lunatic Asylum Demonstrations at the City and County Lunatic Asylum, Fishponds.

Very exceptional facilities are thus afforded Students for obtaining a wide and thorough acquaintance with all branches of Medical and Surgical work. Each Student has the opportunity of personally studying a large number of cases, and of acquiring practical skill in diagnosis and treatment.

FEES.—Composition Fee for Lectures, 65 Guineas or 55 Guineas. Dental Composition in Fee, 55 Guineas.

Perpetual Medical and Surgical Practice, 20 Guineas each, or in one payment, 35 Guineas. Fever Hospital Practice and Lunatic Asylum Demonstrations, 3 Guineas each.

SCHOLARSHIPS AND PRIZES.—Numerous valuable Scholarships and Prizes are offered for Competition.

ENTRANCE SCHOLARSHIPS.—(a) University Entrance Scholarship, value £50. (b) Lady Habfield Entrance Scholarship, value about £30.

SPECIAL SIX MONTHS' COURSE FOR DIPLOMA IN PUBLIC HEALTH.—Fee, 20 Guineas.

MEDICAL LIBRARY.—Students have the use of a large and important collection of books, consisting of some 20,000 volumes.

Prospectuses and all particulars may be obtained on application to

E. MARKHAM SKERRITT, M.D., Dean.

# UNIVERSITY OF EDINBURGH.

Principal ... .. Sir WILLIAM MUIR, K.C.S.I., D.C.L., LL.D., Ph.D., &c.

The **WINTER SESSION** opens on October 16 (Practical Anatomy 1st, and Public Health Laboratory Work 3rd October), and closes on March 22; the **SUMMER SESSION** opens at the beginning of May, and closes about the end of July.

**FACULTY OF MEDICINE:** Dean—Professor THOMAS R. FRASER, M.D., LL.D., F.R.S.

The Faculty embraces thirteen Chairs and eight Lectureships; and attached to these Chairs there are about thirty Assistants and Demonstrators. Instruction is given in all the branches of Medical Science, viz.:—

## PROFESSORS.

Chemistry—Alex. Crum Brown, M.D., D.Sc., LL.D.  
Zoology—J. Cossar Ewart, M.D.  
Botany—Isaac Bayley Balfour, M.D., D.Sc.  
Physics—P. G. Tait, M.A., D.Sc.  
Anatomy—Sir William Turner, M.B., D.C.L., LL.D.  
Physiology—E. A. Schäfer, LL.D.  
Materia Medica—T. R. Fraser, M.D., LL.D.  
Pathology—William S. Greenfield, M.D.

## UNIVERSITY

Mental Diseases—T. S. Clouston, M.D.  
Diseases of the Eye—G. A. Berry, M.B.  
Clinical Instruction on Diseases of Children—Staff of Royal Hospital for Sick Children.  
Embryology and Vertebrate Zoology—J. Beard, D.Sc.  
Regional Anatomy—D. Hepburn, M.D.  
Advanced Practical Physiology—T. H. Milroy, M.D., B.Sc.

Practical Instruction is afforded, under the superintendence of the Professors, in Laboratories with the necessary appliances, and in Tutorial and Practical Classes connected with the above Chairs, and opportunities are afforded to Students and Graduates to extend their practical knowledge and engage in original research.

Opportunities for Hospital Practice are afforded at the Royal Infirmary, the Hospital for Sick Children, Maternity Hospital, the City Hospital, and the Asylum for the Insane. Upwards of 1,500 beds are available for the Clinical Instruction of Students of the University.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.); and Diplomas in special branches of Medical and Surgical Practice may also be conferred on Graduates in Medicine and Surgery of the University.

The minimum Class Fees for M.B. and Ch.B., including Hospital Fee (£12), amount to about £115, and the Matriculation and Examination Fees to £28 7s. An additional Fee of £10 10s. is payable by those who proceed to M.D., and £10 10s. by those who proceed to Ch.M.

The annual value of the Bursaries, Prizes, Scholarships, and Fellowships in the Faculty of Medicine amounts to about £3,600, and that of the other Bursaries, &c., tenable by Students of Medicine, amounts to about £1,820.

Instruction is also given in Public Health, and the Degrees of B.Sc. and D.Sc. in Public Health are conferred by the University.

Residences for Students, Graduates, and others, situated within easy reach of the University, afford excellent board and lodging on very moderate terms.

Further information as to Matriculation, the Curricula of Study for Degrees, &c., may be obtained from the Dean of the Faculty of Medicine, or from the Clerk of Senatus; and full details are given in the University Calendar, published by James Thin, 55 South Bridge.

August, 1900.

By authority of the Senatus, L. J. GRANT, Secretary of Senatus.

# UNIVERSITY COLLEGE, LIVERPOOL, SCHOOL OF PHARMACY.

Principal ... .. PROFESSOR A. W. W. DALE, M.A.

Dean ... .. PROFESSOR A. M. PATERSON, M.D.

## Professors and Lecturers.

**CHEMISTRY.**—Professor J. CAMPBELL BROWN, D.Sc., F.C.S., F.I.O.; T. L. BAILEY, Ph.D.; C. A. KOHN, B.Sc., Ph.D.; A. W. TITHERLEY, M.Sc., Ph.D.

**PHYSICS.**—(Vacant); W. H. DERRIMAN.

**BOTANY.**—Professor R. J. HARVEY GIBSON, M.A., F.L.S.; F. J. LEWIS.

**MATERIA MEDICA.**—Professor W. CARTER, LL.B., M.D., B.Sc., F.R.C.P.; PROSPER H. MARSDEN, F.C.S.

**PHARMACY.**—PROSPER H. MARSDEN, F.C.S.

A complete course of instruction for the Examinations of the Pharmaceutical Society may be taken in University College. The Session consists of a First Course, beginning October, 1900, and a Second Course, commencing in May, 1901.

Applications for admission and all inquiries must be addressed to—

**THE REGISTRAR, University College.**

## GLASGOW ROYAL INFIRMARY.

THE WINTER SESSION opens 15th OCTOBER, 1900. Number of Beds, including the Ophthalmic Department, is 612.

Physicians—Dr. Dougall, Dr. M'Vail, Dr. Middleton, Dr. Lindsay Steven, and Dr. Monro. Surgeons—Mr. Clark, Mr. Knox, Mr. Barlow, Mr. Adams, Mr. Newman, Mr. M'Lennan, and Mr. Fringle. Gynaecologist—Dr. J. K. Kelly. Surgeon for Diseases of Throat and Nose—Dr. John Macintyre. Diseases of the Ear—Dr. Kerr Love. Assistant Physicians—Dr. James Dunlop, Dr. Scott, Dr. Boyd, Dr. Allan, Dr. Hunter, Dr. McKenzie Anderson. Extra Assistant Physicians—Dr. Steel and Dr. J. W. Findlay. Assistant Surgeons—Mr. Dewar, Mr. Rutherford, Mr. Thomson, Mr. McGregor, Mr. Luke, Mr. Paterson. Extra Assistant Surgeons—Mr. Howat, Mr. Patrick.

Special Advice is given to Out-Patients on—Diseases of the Ear, by Dr. Kerr Love; Diseases of the Throat and Nose, by Dr. Fullerton; Diseases of the Eye, by Dr. Maitland Ramsay, Surgeon; Diseases of the Skin, by Dr. Alex. Morton; Diseases of Women, by Dr. Balfour Marshall; Diseases of the Teeth, by Mr. Howard Gray.

Honorary Consulting Dental Surgeon—Dr. J. C. Woodburn. Electrician—Dr. John Macintyre. Assistant Electrician—Assistant Surgeon Dr. J. Rowan and Extra Dispensing Surgeons Dr. W. W. Thomson, Dr. W. Walker, and Dr. J. Gilchrist. Vaccinator—Dr. Henderson. House Appointments—The House Physicians and House Surgeons are elected every six months. An Assistant to the Gynaecologist, who boards but is non-resident, is elected at the same time. Dressers, Clinical Clerks, and Assistants to the Pathologist are selected from the Students.

Bursaries—The David Foulis Scholarship and the John Reid Prize, value £25 each, are open to Students of the Royal Infirmary. Fees, which include Hospital Practice and the Clinical Lectures—For one year, £10 10s.; six months, £6 6s.; three months, £4 4s. The total fee is £21. Vaccination, £1 1s. Pathology, £4 4s. Bacteriology, £2 2s. For further information apply to M. THOMAS, M.D., Superintendent.

## UNIVERSITY OF BIRMINGHAM.

### FACULTY OF MEDICINE.

REGULATIONS CONCERNING THE VARIOUS DEGREES conferred by this University and the requisite COURSES OF INSTRUCTION given at the same and at the Hospitals of the City will be found in the Syllabus of the Medical Faculty, which can be obtained GRATIS on application to Messrs. Cornish Brothers, Booksellers, New Street, Birmingham, or to Geo. H. Morley, Secretary of the University. The Syllabus gives all information as to

I. DEGREES IN MEDICINE.

II. DEGREE AND DIPLOMA IN PUBLIC HEALTH.

III. DEGREES IN DENTISTRY.

THE WINTER SESSION will commence on MONDAY, October 1.

THE DEAN (Professor WINDLE, M.D., D.Sc., F.R.S.) will see parents and students on September 27th, 28th, and 29th, between the hours of 10 and 1, also on October 1st, 2nd, and 3rd, at the same hours, and from 2 o'clock until 3 in the afternoon. The courses of instruction, though mainly arranged in accordance with the regulations of the University, qualify also for the examinations of other British Universities, and for those of all the Licensing Corporations.

For information as to ENTRANCE SCHOLARSHIPS see the Syllabus.

There are also Faculties of Arts and Science. Syllabuses, containing full particulars, are published separately.

# The UNIVERSITY of DURHAM COLLEGE of MEDICINE, NEWCASTLE-UPON-TYNE.

The Degrees in Medicine, &c., of the University of Durham are open both to men and women.

The WINTER SESSION, 1900-1901, will be opened on Monday, October 1st.

## LECTURES—WINTER SESSION, 1900-1901.

*Anatomy*—Professor Howden, M.A., M.B., F.R.S.E.

*Physiology*—Professor Oliver, M.A., M.D., F.R.C.P., and Robert A. Bolam, M.D., B.Sc.

*Chemistry*—Professor Bedson, M.A., D.Sc.

*Medicine*—Professor Sir G. H. Philipson, M.A., M.D., D.O.C.L., F.R.O.P.

*Surgery*—Professor Frederick Page, M.A., M.D., F.R.O.S.

*Midwifery and Diseases of Women and Children*.—R. P. Ranken Lyle, M.A., M.D.

*Hygiene*—Henry E. Armstrong, D.Hy.

*Psychology*—T. W. McDowall, M.D.

*Physics*—Professor Henry Stroud, M.A., D.Sc.

*Bacteriology*—Professor Murray, M.A., M.D., F.R.O.P.

## ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

### MEDICAL AND SURGICAL STAFF.

*Physicians*—Drs. Drummond, Oliver, Limont, and Murray.

*Assistant Physicians*—Drs. Beattie and Bolam.

*Surgeons*—Dr. Hume, Mr. Morison, Mr. Ridley, and Mr. Martin.

*Assistant Surgeons*—Mr. H. B. Angus, Mr. J. V. W. Rutherford, Mr. W. G. Richardson, and Mr. J. W. Leech.

*Eye Department*—Mr. J. D. Wardale.

*Throat and Ear Department*—Mr. Walter Ridley.

*Skin Department*—Dr. J. Limont.

*Pathologist*—Dr. Thomas Beattie.

*Orthopædic Department*—Mr. A. M. Martiu.

*Dental Surgeon*—Mr. R. L. Markham.

*Chloroformist*—Dr. W. D. Arnison.

*Surgical Registrars*—Mr. John Clay and Mr. J. D. Wardale.

*House Physician*—Dr. W. Simpson.

The Royal Infirmary contains 280 beds. Clinical Lectures are delivered by the Physicians and Surgeons in rotation. Pathological Demonstrations are given, as opportunity offers, by the Pathologist. Practical Midwifery can be studied at the Newcastle Lying-in Hospital, where there is an outdoor practice of about 300 cases annually. Lectures are given on Psychological Medicine in the College of Medicine, and clinical instruction at the Northumberland County Asylum, &c., by Dr. McDowall, Medical Superintendent. Special Courses of Instruction in Outdoor Sanitary Practice and in the Hospital for Infectious Diseases are given by the City Officer of Health, Dr. H. E. Armstrong.

### FEES.

- (a) A Composition Ticket for Lectures at the College may be obtained—
  1. By payment of 70 guineas on entrance.
  2. By payment of 45 guineas at the commencement of the first year, and 35 guineas at the commencement of the second year.
  3. By three annual instalments of 35, 30, and 20 guineas respectively, at the commencement of the sessional year.
- (b) Fees for attendance on Hospital Practice—

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| " 6 "                                        | 8 "   |
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or by three instalments at the commencement of the sessional year—viz., first year, 12 guineas; second year, 10 guineas; third year, 6 guineas. Or by two instalments—viz., first year, 14 guineas; second year, 12 guineas.

In addition to the above fees, the Committee of the Royal Infirmary require the payment of 2 guineas yearly up to three years, for every Student attending the Infirmary for a year or part of a year. After three years of attendance such payment will be no longer necessary.

- (c) Single Courses of Lectures, 5 guineas.

Fees for Lectures, &c., at College must be paid to the Secretary, and fees for Hospital Practice to the House Physician at the time of entry.

Further particulars may be obtained from Professor HOWDEN, Secretary, at the College.

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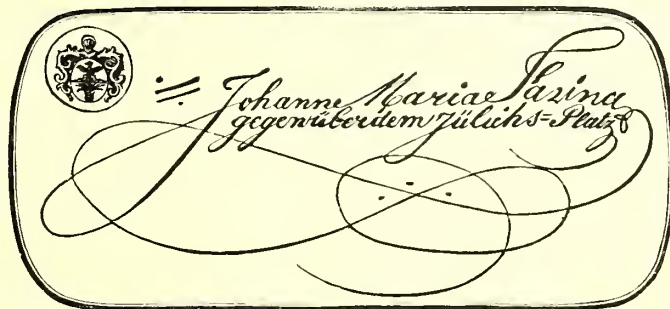
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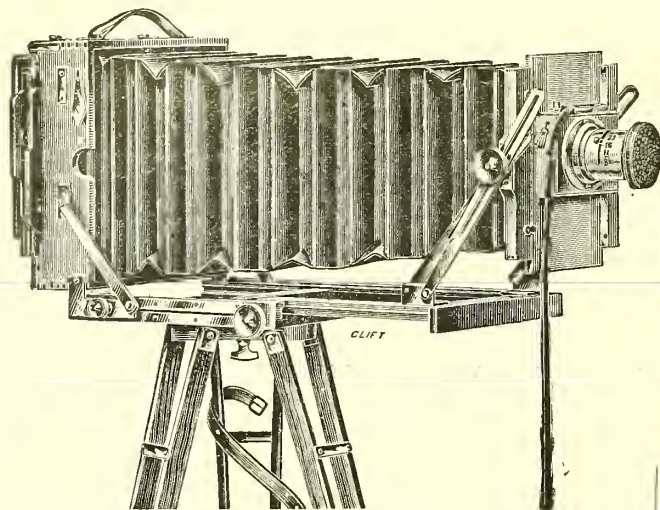
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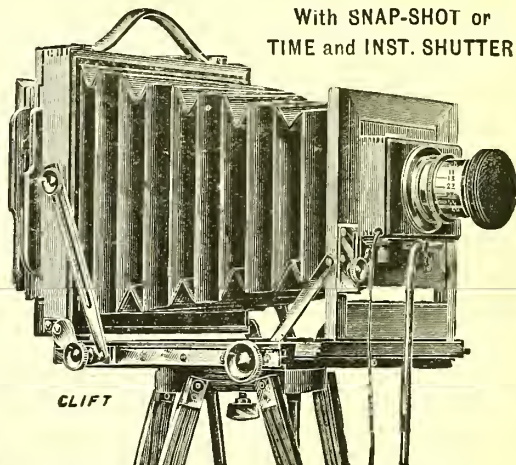
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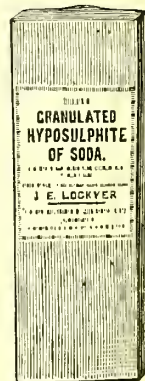
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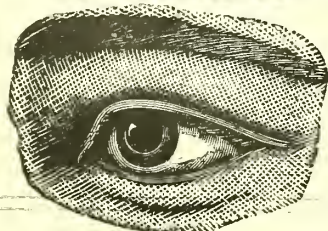
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## INDEX TO ADVERTISEMENTS APPEARING IN THIS ISSUE.

|                                      | Page     |                                    | Page       |                                          | Page     |                                        | Page     |
|--------------------------------------|----------|------------------------------------|------------|------------------------------------------|----------|----------------------------------------|----------|
| Alexandre, L. ....                   | 71       | Elliman, Sons & Co. ....           | Cover      | Lockyer, J. E. ....                      | 24       | Robinson, B. ....                      | 66       |
| Allen & Hanburys (Lim.) ..           | Cover    | Ellison, F. E. (Lim.) ....         | 30         | Lofthouse & Saltmer. ....                | 46       | Rothschild & Baker ..                  | 80       |
| Alstrom, C. ....                     | 45       | Exchange Oil Company ..            | Col. Supp. | London College of Pharmacy ..            | 9        | Royal Dispensary ..                    | 14       |
| Amberg File and Index Co. ....       | 45       | Fairchild Bros. & Foster ..        | 50         | London College of Pharmacy for Ladies .. | 18       | Royal (Dick) Veterinary College ..     | 11       |
| Anglo-American Drug Co. (Lim.) ..    | 54       | Farina, J. M. ....                 | 23         | Lorenz, H. ....                          | 19       | St. Andrews University ..              | 22       |
| Apollinaris Co. (Lim.) ....          | Cover    | Fellows Manufacturing Co. ....     | 55         | Mackey, Mackey & Co. (Lim.) ..           | 53, 76   | Salutaris Water Co. ....               | 69       |
| Armour & Co. ....                    | 45       | Fennings, A. ....                  | Cover      | Manchester College of Pharmacy ..        | 56       | Sanitas Company (Lim.) ..              | Text 410 |
| Ashton & Parsons (Lim.) ..           | 81       | Fentiman, A. J., & Co. ....        | 70         | Mason Bros. & Chapman ..                 | 56       | School of Pharmacy ..                  | 5        |
| Atfield's Chemistry Books ..         | 21       | Ferris & Co. ....                  | 60         | Maw, S., Son & Thompson ..               | 73       | School of Pharmacy (Dr. Griffiths) ..  | 16       |
| Barnett & Foster. ....               | 62       | Fink, F., & Co. ....               | 70         | May & Baker (Lim.) ..                    | Cover    | Sheffield College of Pharmacy ..       | 11       |
| Barrett, R. H. ....                  | 71       | Fletcher, Fletcher & Co. ..        | Text 410   | Meggett, Samuel, & Sons (Lim.) ..        | 34       | Shirley Bros. ....                     | 40       |
| Barron, Harveys & Co. ....           | 54       | Forster, M. E. ....                | 35         | Metropolitan College of Pharmacy ..      | 8        | Skrine, E. H. ....                     | 68       |
| Becciam, T. ....                     | 60       | Gardner, W., & Son ..              | 25         | Middlesex Hospital ..                    | 19       | Salazzi ..                             | 42       |
| Beiersdorf, P., & Co. ....           | 72       | Geraut, E., & Co. ....             | 69         | Millar, A., & Co. (Lim.) ..              | 66       | South London School of Pharmacy ..     | 6        |
| Bertie-Smith & Co. (Lim.) ..         | 4        | Glasgow Royal Infirmary ..         | 20         | Moss, J., & Co. ....                     | Text 410 | South-Western Polytechnic ..           | 21       |
| Bond's, John, Marking-ink ..         | 38       | Glasgow School of Pharmacy ..      | 15         | Mumford, G. S., & Son ..                 | Text 410 | Southwell, Chas., & Co. ....           | 43       |
| Boord & Son ..                       | 36       | Goldsmiths' Institute ..           | 19         | National Dental Hospital ..              | 19       | Spencer & Son ..                       | 70       |
| Botwright & Grey ..                  | 13       | Greensill & Co. ....               | 31         | Nelson, Dale & Co. ....                  | Text 410 | Spratt's Patent (Lim.) ..              | Text 410 |
| Bovril (Lim.) ..                     | 48       | Harvey S. (Lim.) ..                | 38         | New Veterinary College ..                | 11       | Sprayway & Cie. ....                   | 31       |
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| Brunner, Mond & Co. (Lim.) ..        | 52       | Hebden, H. ....                    | 71         | Newton, Chambers & Co. (Lim.) ..         | 78       | Strong, Christy ..                     | 79       |
| Burge, Warren & Ridgley ..           | 74       | Hedakene (Lim.) ..                 | 40         | Northern College of Pharmacy ..          | 13       | Thiellay, E. H. ....                   | 70       |
| Burrough, J. (Lim.) ..               | 36       | Hewlett, C. J., & Son ..           | 58         | North of England School ..               | 16       | Tomlinson & Hayward ..                 | 26       |
| Burroughs, Wellcome & Co. ....       | 48, 49   | Hillah, J. (Lim.) ..               | 42         | Oakey, J., & Sons (Lim.) ..              | 71       | Tower Tea (Lim.) ..                    | 68       |
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| Camwal (Lim.) ..                     | 67       | Hovenden, R., & Sons ..            | 34         | Parnis Medicine Co. ....                 | 56       | University of Bristol ..               | 19       |
| Carbonic Acid Gas Co. ....           | 63       | Hunyadi Janos ..                   | 69         | Parnall & Sons (Lim.) ..                 | 30       | University of Durham ..                | 21       |
| Carson, H. J. ....                   | 16       | Idris & Co. (Lim.) ..              | 31         | Pastorelli & Rapkin ..                   | 24       | University of Edinburgh ..             | 20       |
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British Machine Co., Lim.

## CHEMICALS

Baiss Bros. & Stevenson  
Boehringer, C. F., & Sohne  
Brunner, Mond & Co., Lim.  
Burgoyne, Burbridge & Co.  
Davy Hill & Son, Yates & Hicks  
Evans, Lescher & Webb  
Evans, Sons & Co.  
Goodall, Backhouse & Co.  
Howards & Sons (Pharm.)  
Lofthouse & Saltmer  
Macfarlan, J. F., & Co.  
May & Baker, Lim.  
Merck, E.  
Sanitas Co., Lim.  
Scottish Acid & Alkali Co., Ld.  
Smith, B. A., & Co.  
Smith, T. H., & Co.  
Tytkie & King  
Voss, Walter, & Co.  
Washington Chemical Co.  
White, A., & Son

## CHEST PROTECTORS

Liverpool Patent Lint Co.  
Maw, S., Son & Thompson  
Solport Bros.  
Wood, Vincent

## CHLORIDE OF LIME

Hebden, W. C.  
Steele, J. C., & Co.

## CHLOROFORM

Duncan, Flockhart & Co.  
Macfarlan, J. F., & Co.  
Smith, T. H., & Co.

## CHLORODYNE

Davenport (Browne's)

## COCAINE-HYDRO.

Boehringer, C. F., & Sohne  
Howards & Sons  
Merck, E.

## COCA WINE

Burrough, J., Lim.  
Evans, Lescher & Webb  
Stephen Smith & Co., Lim.  
(Hall's)

## COCA WINE

Burrough, J., Lim.

## COCOA &amp; CHOCOLAT

Cadbury Bros.  
Fry & Sons  
Van Houten  
Vi-Cocoa (Dr. Tibbles)

## COD-LIVER OIL

Baiss Bros. & Stevenson  
Burroughs, Wellcome & Co.  
Evans, Lescher & Webb  
Evans, Sons & Co.  
Goodall, Backhouse & Co.  
Harker, Stagg & Morgan  
Kemp & Son  
Lofthouse & Saltmer  
Randall & Son  
Smith, T. H., & Co.  
Spratt's Patent (Dog Cakes)  
Scott's Emulsion  
Southall Bros. & Barclay

## COLLAPSIBLE TUBES

Christy, T., & Co.  
Marshall, Lim.  
Vigo, Jules, et Cie.

## COMP. MEDICINES

Allen & Hanburys  
Burroughs, Wellcome & Co.  
Keene & Ashwell  
Leo & Co.  
Lloyd, T. Howard, & Co.  
Manners & Hopkinson  
Parke, Davis & Co.

**CONCENT. LIQUORS**

Baiss Bros. & Stevenson  
Fletcher, Fletcher & Co.  
Lloyd, T. Howard, & Co.  
Robinson, B.

**CONFECTIONERY**

Gibson & Sons  
Guest, T., & Co.  
Hillabys, Lim.

**CORKS**

Ringrose & Cobb

**CRUSHED LINSEED**

Mumford, G. S.

**DENTIFRICES, &c.**

Beecham, T.  
Hovenden & Sons  
Jewsbury & Brown  
Stevens, P. A.  
Sutton, O., & Co.  
Woods, W. (Areca Nut)

**DENTISTRY**

Browning, A. J.  
Fentiman, A. J., & Co.  
Spencer & Son

**DISINFECTANTS**

Calvert, F. C., & Co.  
Dussek Bros.  
Fletcher Bros. & Co.  
Hebdou, W. C.  
Izal  
Jeyes' Sanitary Compounds  
& Co., Lim.  
Kay Bros., Lim.  
Mackey, Mackey & Co.  
Major & Co., Lim.  
Mason Bros. & Chapman  
May & Baker, Lim.  
Mayor, Geo., & Co.  
Morris, Little & Son, Lim.  
Sautias Co., Lim.  
Steele, J. C., & Co.  
Tomlinson & Hayward  
Tyrer, T., & Co., Lim.

**DOG MEDICINES, &c.**

Spratt's Patent, Lim.

**DRUGGISTS' SUNDRS.**

Ayrton & Saunders  
Barclay & Sons, Lim.  
Bleasdale & Co., Lim.  
Burge, Warren & Ridley  
Denoual, J., & Co.  
Evans, Lescher & Webb  
Evans, Sons & Co. (Savars)  
Fassett & Johnson  
Fordham, W. B., & Sons, Lim.  
Gilbertson, H., & Sons, Lim.  
Hedakine, Lim.  
Hovenden & Sons  
Kay Bros., Lim.  
Kelpion Co.  
Marshall's, Lim.  
Maw, S., Son & Thompson  
May, Roberts & Co.  
Newbery, F., & Sons  
Parkes, J., & Co.  
Quelch, H. C.  
Roberts & Sheppey  
Sander & Sons  
Schutze & Co.  
Shirley Bros.  
Solport Bros.  
Southall Bros. & Barclay  
Tidman & Son  
Toogood, W.  
Wood, Vincent  
Woolf, E.

**DRUG GRINDERS**

Allen, S., & Sons

**DRUGS**

Baiss Bros. & Stevenson  
Bleasdale & Co., Lim.  
Louthouse & Saltmer  
Merck, E.  
Oppenheimer, Son & Co.  
Wyley's, Lim.

**DYES**

Crawshaw, E., & Co.

**EAU DE COLOGNE**

Farina, J. M.  
Sainsbury, S.  
Van Oppen & Co.

**EMBROCATION**

Day & Sons  
Elliman, Sons & Co.  
Harvey & Co.  
Post, A. M., Lim.  
Sautias Co., Lim.

**ENEMAS**

Barclay & Sons, Lim.  
Evans, Sons & Co.  
Lynch & Co., Lim.  
Newbery, F., & Sons  
Sanger & Son  
Wood, Vincent  
Woolley, J., Sons & Co., Lim.

**ESSENCES**

Allen & Hanbury, Lim  
Barnett & Foster  
Bush, W. J., & Co., Lim.  
Fletcher, Fletcher & Co.  
Goodall, Backhouse & Co.  
Hay, Wm., Lim.  
May & Baker, Lim.  
Newball & Mason  
Stevenson & Howell  
Woolley, J., Sons & Co., Lim.

**ESSENTIAL OILS**

Allen, S., & Sons  
Baiss Bros. & Stevenson  
Barnett & Foster  
Bush, W. J., & Co.  
Corio, F. A.  
Evans, Sons & Co.  
Horner & Sons  
Jeancard, Gazan & Doumin  
Loudon Essence Co.  
May & Baker, Lim.  
Poppelreuter, W.  
Quelch, H. C.  
Ransom, Wm., & Sons  
Raynaud, Claude, & Co.  
Sautias Co., Lim.  
Stevenson & Howell  
Warrick Bros.

**ETHER**

Duncan, Flockhart & Co.  
Howards & Sons  
Macfarlan, J. F., & Co.  
May & Baker, Lim.  
Tyrer, T., & Co.  
White, A., & Sons

**EUCALYPTUS OIL**

Sautias Co., Lim.  
Sharland & Co.  
Tasmanian Eucalyptus Oil Co.

**EXTRACT MEAT**

Armour & Co.  
Brand & Co.  
Liebig Co.  
Nelson, G., Dale & Co., Lim.

**EXTRACTS, FLUID**

Allen & Hanbury's  
Allen, S., & Co.  
Bleasdale & Co., Lim.  
Burgeyne, Burdidges & Co.  
Evans, Sons & Co.  
Fletcher, Fletcher & Co.  
Hearon, Squire & Francis  
Lloyd, T. Howard, & Co.  
Merek, E.  
Parke, Davis & Co.  
Potter & Clarke  
Ransom, W., & Son

**EXTRACTS, SOLID**

Allen, G., & Co.  
Nelson, G., Dale & Co., Lim.  
Ransom, W., & Son

**FEEDING BOTTLES**

Barclay & Sons, Lim.  
Evans, Sons & Co.  
Gilbertson, H., & Sons, Lim.  
Hovenden & Sons  
Kelpion Bros.  
Lynch & Co., Lim.  
Maw, S., Son & Thompson  
May, Roberts & Co.  
Youldon, E.

**FILTERS**

Berkfeld Filter Co., Lim.  
Defries, J., & Sons

**FLY CATCHERS**

Alabastine Co. (British), Lim.  
Chameleon Patents Mfg. Co., Lim.  
Ford, Shapland & Co.  
Goddon, Lim.  
Kay Bros.  
Marshall's, Lim.  
Mathew, W., Lim.  
Maw, S., Son & Thompson  
Newbery, F., & Sons  
Shirley Bros.  
Smith, J. H., & Co.  
Strong, Christy  
Tunbridge & Wright

**FOOD (In'ants' & Invalids)**

Allen & Hanbury  
Beanes, E., & Co.  
Benger's Food  
Bleasdale & Co., Lim.  
Bovril, Lim.  
Braud & Co.  
British Somatose Co., Lim.  
Burgeyne, Burdidges & Co.  
Coombs' Flour Co., Lim.  
Cosenza & Co.  
"Feroval," Squire's  
Frame Food Co.  
Goodall, Backhouse & Co.  
Hearon, Squire & Francis  
King, G., & Co.  
Liebig Co.  
Nelson, G., Dale & Co., Lim.  
Nestle, H.  
Parke, Davis & Co.  
Paviment Syndicate, Lim.  
Ridge, Dr.  
Savory & Moore  
Vi-Cocoa (Dr. Tibbles)  
Vitol (Bovril), Lim.  
Worth's Foods Syndicate, Lim.

**FRUIT SALT**

Eno, J. C., Lim.

**GELATINS, GUMS, &c.**

Frank, F., & Co.  
Meggett, Saml., & Sons, Lim.

**GLYCERIN**

Price's Candle Co., Lim.

**GRANULAR PREP.**

Bishop, A., & Sons  
Evans, Gadd & Co.  
Evans, Sons & Co.  
Hearon, Squire & Francis  
Lloyd, T. Howard, & Co.  
Louthouse & Saltmer  
Tyrer, T., & Co., Lim.

**HAIR PREP.**

Alexandre, L.  
Chesebrough Co.  
Fush, W. J., & Co.  
Hopgood, W.  
Thiellay, E. H.

**HERB BEER EXTS.**

Newball & Mason  
Potter & Clarke

**HOMOEOPATHIC**

Ashton & Parsons  
Keene & Ashwell (Periods)  
Leath & Sons  
Watson & Wates

**HYPOPHOSPHITES**

Duncan, Flockhart & Co.  
Fellows  
Fletcher, Fletcher & Co.  
Tyrer, T., & Co., Lim.

**INHALERS**

Hawley, T. (AmCl)  
Krohn & Sessmann  
Lynch & Co., Lim.  
Newsbome, G. T. W.

**INSECTICIDES**

Bleasdale, Lim.  
Fleming's Oil & Chemical Co.  
Lim.  
Jackson, T.  
Tunbridge & Wright

**LAVENDER WATER**

Newbery, F., & Sons (Berdoe's)  
Sainsbury, S.

**LEMON PEEL, &c.**

Southwell, C., & Co.  
Toomey, J.

**LETTER FILES.**

Amberg File & Index Co.

**LIME JUICE, &c.**

Idrill, J. C., Lim.  
Riddle, Alexander, & Co., Lim.

**LINT**

Burgeyne, Burdidges & Co.  
Christy, T. & Co.  
Dartton, Gibbs & Co.  
Liverpool Lint Co.  
Maw, S., Son & Thompson  
Newsome, C.  
Robinson & Sons  
Wood, Vincent

**LIQUORICE**

Evans, Gray & Hood ("Solazzi")  
Evans, Sons & Co. (Savarini)  
Hillabys, Lim.  
Jeancard, Gazan & Doumin  
Wilkinson & Co.  
Young & Smylie

**LIQUORS**

Baiss Bros. & Stevenson  
Fletcher, Fletcher & Co.  
Lloyd, T. Howard, & Co.  
Oppenheimer, Son & Co., Lim.

**LOOFAHS**

Solport Bros.

**LOTIONS**

Edgar's Croup Lotion

**LOZENGES, &c.**

Allen & Hanbury's  
Denoual, J., & Co.  
Gibson, R., & Sons (Manfrs.)  
Guest, T., & Co., Lim.  
Jackson, T.  
Raines & Co.  
Warrick Bros.

**LUNG PRESERVERS**

Zimmer & Co.

**MACHINERY**

Bennett, Sons & Shears, Lim.  
Colton, Arthur  
Gardner, W., & Sons  
Melin, C. J. W.  
Pindar, J. W.

**MAGNESIA**

American Magnesia Co.  
Bishop, A., & Sons, Lim.  
Bleasdale, W., & Co.  
Henry, T., & W. (Calmed)  
Lloyd, T. Howard, & Co.  
Washington Chemical Co.

**MALT EXTRACT, &c.**

Allen & Hanbury  
Burroughs, Wellcome & Co.  
(Lepers)  
Hearon Squire & Francis  
Parke, Davis & Co.  
Price's Patent Candle Co., Ltd.  
Raines & Co.  
Raines, Clark & Co.

**MARKING INKS**

Bond, John Crystal Palace

**MEASURES**

Taylor, F. H., & Co.

**MEDICINE CHESTS**

Burroughs, Wellcome & Co.  
Day, Son & Hewitt (Veterinary)  
Day & Sons (Veterinary)

**MERCURIALS**

Howards & Sons  
May & Baker, Lim.  
Tyrer, T., & Co., Lim.

**METH. SPIRIT, &c.**

Boord & Son  
Burrough, J., Lim.  
Jones & Co. J. Phillips, G., & Co.

**MICROSCOPES**

Darton, F., & Co. | Ross, Lim.

**MILK**

Nestle, H. (Condensed)

**MORPHIA**

Macfarlan, J. F., & Co.  
Smith, T. & H., & Co.

**OILS, VARNISHES, &c.**

Calvert Bros. & Co.  
Pinchin, John-on & Co.  
Stern Bros. (White)

**OINTMENT BASES, &c.**

Baiss Bros. & Stevenson  
Burroughs, Wellcome & Co.  
(Lanolin)  
Chesebrough Co. (Vaseline)  
Lloyd, T. Howard, & Co.  
Resinol Chemical Co.

**OXIDE OF ZINC**

Baiss Bros. & Stevenson  
Hubbuck, T., & Son, Lim.

**PALATINOLDS**

Oppenheimer, Son & Co., Lim.

**PATENT AGENTS**

Chapman, J. C., & Co.  
Trade Mark Protection Society

**PATENT MEDCNS &c.**

Anglo-American Drug Co., Ltd.  
Barclay & Sons, Lim.  
Beecham, T. (Pills)  
Clarke's Blood Mixture  
"Daisy" Headache Powders  
Edgar's Croup Lotion  
Edwards & Son  
Evans, Lescher & Webb  
Evans, Sons & Co.  
Fenning (Powders)  
Goodall, Backhouse & Co.  
Holloway (Pills and Oint.)  
Hovenden & Sons  
Lagamen, C.  
Laird Phosphodyne, &c.)  
May, Roberts & Co.  
Newbery, F., & Sons  
Paris Medicine Co.  
Post, A. M., Lim.  
Richards, J. M.  
White, A. J., Lim.

**PEPPERMIN OILS**

Bush, W. J., & Co.  
Ransom, W., & Son  
Stevenson & Howell

**PEPSIN, &c.**

Armour & Co.  
Baiss Bros. & Stevenson  
Burroughs, Wellcome & Co.  
Cerebros Limited (Pepsalia)  
Fairchild Bros. & Foster  
Merrell, W. S. Chemical Co.  
Parke, Davis & Co.  
Randall & Son

**PERFUMERY, FANCY SOAPS**

Allen & Hanbury's, Lim.  
Atkinson, J., & E., Lim.  
Ayrton & Saunders  
Barclay & Sons, Lim.  
Bleasdale, Lim.  
Bush, W. J., & Co.  
Chesebrough Co.  
Cook, E., & Co., Lim.  
Corbyn, Stacey & Co.  
Evans, Sons & Co.  
Farina, J. M.  
Greensill & Son  
Hovenden & Sons  
Jeancard, Gazan & Doumin  
Loudon Essence Co.  
Marshall's, Lim.  
Mulhens, F.  
Newbery, F., & Sons (St. Paul's)  
Parke, J. C., & Co.  
Pears, A. & F., Lim.  
Potter & Clarke (Sachets)  
Quelch, H. C.  
Raynaud, Claude, & Co.  
Roberts & Sheppey  
Sainsbury, S.  
Sanger, J., & Sons  
Schutze, F., & Co.  
Spurway & Co.  
Van Oppen & Co.  
Vigo, Jules & Co., Lim.  
Vinolia Co., Lim.  
West, T. (Ockell's Mona)

**PESSARIES**

Rendell, J. W.

**PHOTOGRAPHIC, X RAY, &c.**

Barclay & Sons, Lim.  
Burroughs, Wellcome & Co.  
Butcher, W., & Son  
Cox, H. W., Lim.  
Darton, F., & Co.  
Evans, Sons & Co.  
Harrington Bros.  
Houghton, G., & Son  
Lockyer, J. E.  
Mackey, Mackey & Co.  
Merek, E.  
Newbery, F., & Sons  
Raphael, J., & Co. | Ross Lim.  
Seabrook Bros. & Co.  
Shew, C.  
Townsend, J., & Son  
Tyrer, T., & Co.  
White, Alfred, & Sons  
Woolley, J., Sons & Co., Lim.

**PEROX. OF HYDR.**

May & Baker, Lim.  
Sautias Co., Lim.  
Tyrer, T., & Co., Lim.

**PTERLEUM JELLY, &c.**

Allen & Hanbury's  
Christy, T., & Co.  
Dee Oil Co., Lim.  
Harrick, James L., & Co.  
Snowdon, Sons & Co. (Ld. Jelly)  
Stern Bros.

**PHARM. PREPS.**

Allen & Hanbury's  
Armour & Co.  
Baiss Bros. & Stevenson  
Barron, Harveys & Co.  
Boehringer, C. F., & Sohne  
British Somatose Co., Lim.  
Burgeyne, Burdidges & Co.  
Burroughs, Wellcome & Co.  
Davies, Gibbins & Co.  
Duncan, Flockhart & Co.  
Evans, Gadd & Co.  
Evans, Lescher & Webb  
Evans, Sons & Co.  
Fairchild Bros. & Foster  
Fassett & Johnson  
Farris & Co.  
Fletcher, Fletcher & Co.  
Hearon, Squire & Francis  
Hedakine, Lim.  
Hewlett & Sons  
Howards & Sons  
Kelpion Co.  
Lagamen, C.  
Lambert Pharm. aal Co.  
Louthouse & Saltmer  
Macfarlan, J. F., & Co.  
Mackey, Mackey & Co.  
Manners & Hopkinson  
Martindale, W.  
May & Baker, Lim.  
Merck, E.  
Merrell, Wm. S., Chemical Co.  
Oppenheimer, Son & Co.  
Parke, Davis & Co.  
Potter & Clarke, Lim.  
Smith, T. & H., & Co.  
Squire & Sons  
Stern Bros.  
Tyrer, T., & Co., Lim.  
White, Alfred, & Sons  
Wilcox & Co.  
Willows, Francis, Butler & Thompson  
Woolley, Sons & Co., Lim.  
Wyley's, Lim.  
Zimmer & Co.

**PILL MACHINES**

Bennett, Sons & Shears, Lim.  
Pindar, J. W.

**PILLS, Coated &c.**

Allen & Hanbury's, Lim.  
Beecham, Thomas  
Bleasdale & Co., Lim.  
Cox, Arthur H., & Co.  
Davies, Gibbin & Co.  
Davy, Hill & Son, Yates & Hicks  
Duncan, Flockhart & Co.  
Evans, Gadd & Co.  
Hearon, Squire & Francis  
Holloway, Professor  
Kearsley, J., & G.  
Lloyd, T. Howard, & Co.  
McKesson & Robbins  
Manners & Hopkinson  
Parke, Davis & Co.  
Scottish Sugar-coated Pill Co.  
Wand, S. (Pill Coated)  
Warner, W. R., & Co. (Coated)  
Wyley's, Lim.

**PLASTERS**

Betersdorf, P., & Co.  
Chesebrough Mfg. Co.  
De St. Dalmas, A.  
Evans, Sons & Co.  
Mather, W., Lim.  
Sesbury & Johnson  
Solport Bros. (Court)

**POLISHING**

Bradley & Bourdas (Albatum)  
Fordham, W. B., & Sons, Lim.  
Oakley, J., & Sons, Lim.  
Raines & Co. (Stockton)

**PRINTING**

Bowers Bros.  
Corsan, J. H. (Glass)  
Ford, Shapland & Co.  
Harrison & Waide  
Townsend, J.

**QUININE**

Boehringer, C. F., & Sohne  
Bucht, Chas., & Co.  
Howards & Sons  
Imperial Quinine Co.  
Philpott, M. & Co.  
Zimmer & Co.

**RENNET**

Duncan, Flockhart & Co.  
Tomlinson & Hayward

**RESPIRATORS**

Wallach Bros.  
Zimmer & Co.

**RUBBER STAMPS**

Bond, J. (Crystal Palace)  
Richford, E. M.

**SACCHARIN**

Anglo-Continental Chemical  
Works, Lim.  
Saccharin Corporation, Lim.

**SALICIN**

Macfarlan, J. F., & Co.  
Smith, T. & H., & Co.

**SAUCES, PICKLES**

Goodall, Backhouse &amp; Co.

**SCHOOLS, &c.**

Carso, Mr.  
Central School  
Edinburgh Central School  
Glasgow Royal Infirmary  
Glasgow School (J. Lothian)  
Goldsmiths' Institute  
Imperial College (Davis, F.)  
Leeds College of Pharmacy  
Liverpool School  
London College  
London College of Pharmacy  
for Ladies  
London Hospital  
Manchester Col. of Pharmacy  
Metropolitan Col. of Pharmacy  
Midsex Hospital  
National Dental Hospital  
New Veterinary Coll-ge (Edin-  
burgh)  
North of England School  
Northern College of Pharmacy  
Owens College  
Queen's College  
Reading College  
Royal (Dick) Veterinary Col.  
Royal Dispensary (Edinburgh)  
School of Pharmacy (Bloom-  
bury)  
School of Pharmacy (Brixton)  
Sheffield College of Pharmacy  
South London School of  
Pharmacy, Lim.  
South Western Polytechnic  
University College, Birming-  
ham  
University College, Bristol  
University College, Edinbro'  
University College, Liverpool  
University of Durham  
University of St. Andrews  
West of Scotland College  
Westminster College

**SEA SALT**

Tidman &amp; Son, Lim.

**SEEDS**

Potter &amp; Clarke

**SELTZOGENES**Gerant, E., & Co.  
Thessier, E.**SHAVING**Hovenden & Sons (Fuxesis)  
Lloyd, A., & Co. (A. S. Lloyd's  
Fuxesis)**SHEEP DIP**Fletcher Bros. & Co.  
Morris, Little & Son, Lim.  
Sanitas Co., Lim.  
Tomlinson & Hayward**SHOP FITTERS**

Alstrom, C.  
Ayrton & Saunders  
Bowling & Govier  
Bygrave, J. & W.  
Ellison, F. E., & Co., Lim.  
Evans, Sons & Co.  
Howlett, S., & Son  
Josephs, Philip, & Son  
Maw, S., Son & Thompson  
Parnall & Sons, Lim.  
Tittensor, Geo.  
Treble, G., & Son

**SIZE**

Meggett, S., &amp; Sons, Lim.

**SOAP**

Allen & Hanburys, Lim.  
Ayrton & Saunders  
Bronnley, H., & Co.  
Calvert, F. C., & Co.  
Cook, E., & Co.  
Foster, M. E.  
Gibbs, D. & W. (Medicated)  
Milhens, F.  
Pears, A. & F. Lim.  
Resinol Chemical Co.  
Sanitas Co., Lim.  
Vinolia Co., Lim.

**SPECTACLES &c.**

Botwright & Grey  
Darton, F., & Co.  
Lawrence, Henry  
Raphael, J., & Co.

**SURGICAL**

Bailey, W. H., & Son  
Barclay & Sons, Lim.  
Beiersdorf, P., & Co.  
Burgoyne, Burdidges & Co.  
Darton, Gibbs & Co.  
Davel Rubter Co.  
Domen Belts Co.  
Eschmann Bros. & Walsh  
Fassett & Johnson  
Ferris & Co.  
Findlay, John J., & Co.  
Galen Manufact'g Co., Lim.  
Gilbertson, H., & Sons, Lim.  
Haywood, J. H.  
Krohne & Sesemann  
Liverpool Patent Lint Co.  
Lynch & Co., Lim.  
Macfarlan, J. F., & Co.  
Maw, S., Son & Thompson  
Mineralized Rubber Co.  
Oppenheimer, Son & Co., Lim.  
Powell & Barstow  
Queleh, H. C.  
Robinson & Sons  
Sanitary Wood Wool Co., Lim.  
Schutze, F., & Co.  
Spongio Piline  
Wood, Vincent

**SPONGES**

Cohen, J. & M.  
Cresswell Bros. & Schmitz  
Phillips, J., & Sons

**STERILIZERS**

Browne & Sayer  
Hawksley, T. (Milk)

**STOPPERS**

Austin & Co. (Sprinklers)  
Barnett & Foster  
Melin, C.  
Stipendium Stopper Co., Lim.

**STOVES**

Clark, S., &amp; Co., Lim.

**SUGAR**

Macfie &amp; Sons

**SYPHONS**

Barnett & Foster  
Carnwal Lim.  
Gerant, E., & Co.  
Idris & Co., Lim.  
Kilner Bros. | Melin, C.

**SYRUPS**

Beckett, W., Sons & Co.  
Fletcher, Fletcher & Co. (Liquors)  
Stevenson & Howell

**TABLETS**

Corsan, J. R. (Advertising)  
Lantern, A., & Co.  
Roberts & Sheppy

**TEA**

Sirrine's Chimbara Digestive  
Tea  
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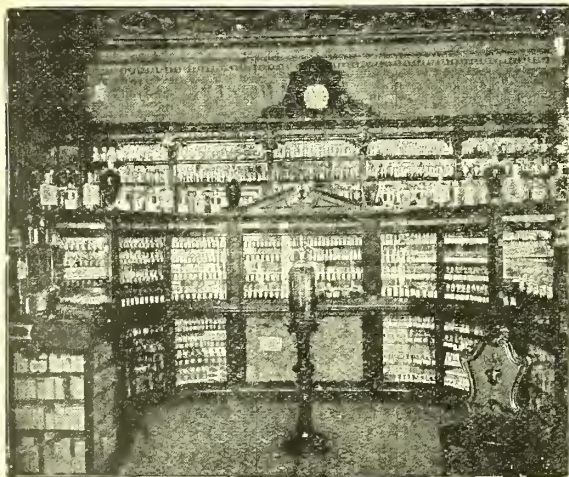
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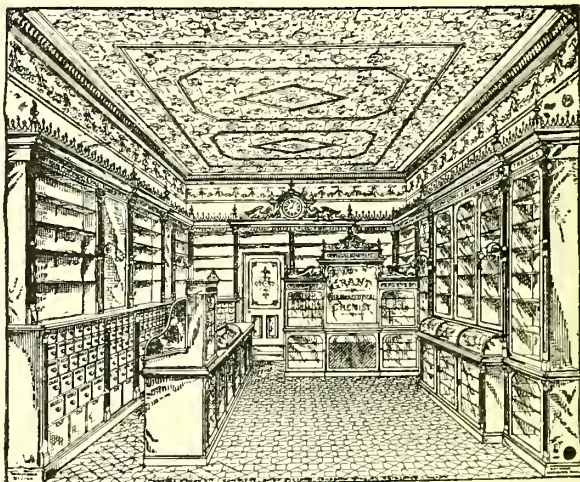


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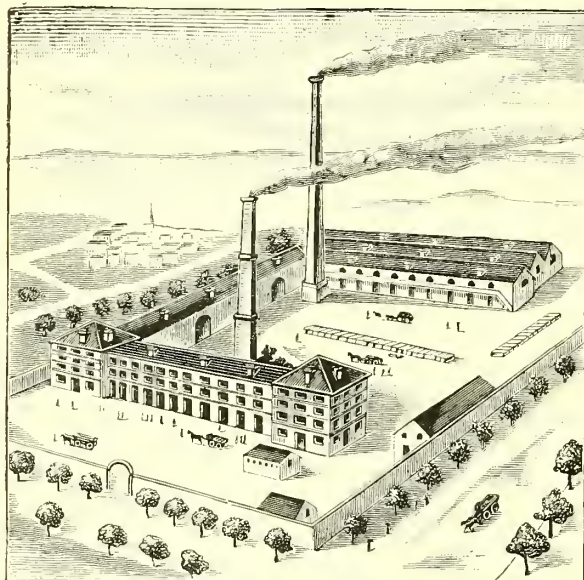
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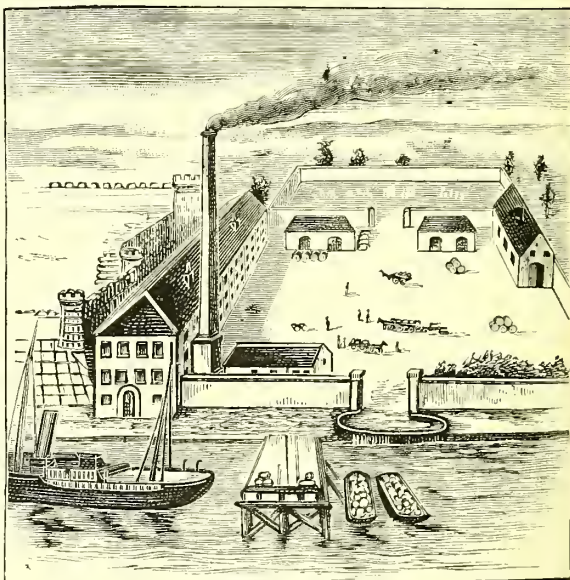
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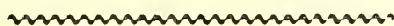
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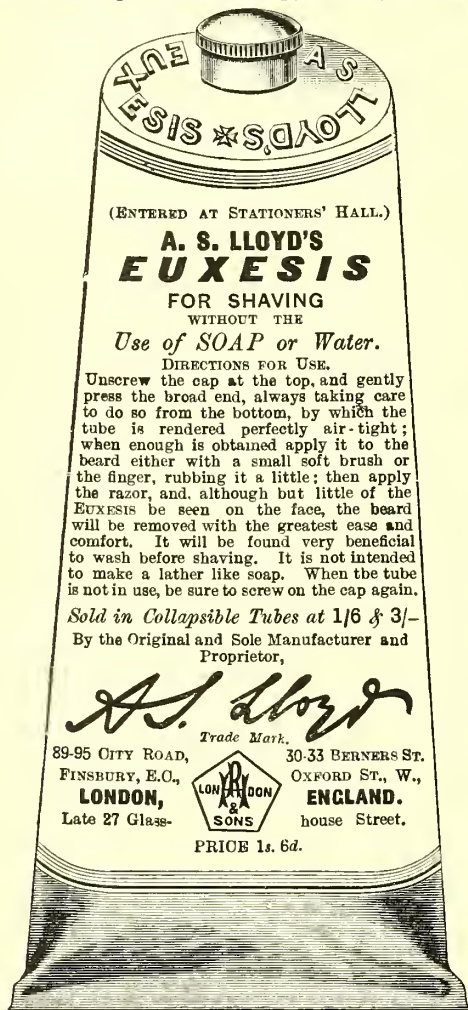


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SATURDAY, SEPTEMBER 8, 1900

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For Bargains see end of this Supplement.

Partnerships  
Situations Vacant  
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Miscellaneous

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8.—**NORFOLK.**—Light Retail Prescribing and Agricultural trade, nothing heavy; returns £1,200; net profit £300; good house and garden; price £650.

9.—**LONDON, W. (Main Road).**—Retail Dispensing and Proprietaries; returns £900; net profit £325 clear; price £50 and valuation of stock and fixtures, about £500.

10.—**LONDON, N.**—Death vacancy; returns £500 under management, ought to do £1,000; select Retail and Dispensing; price £300.

## UP-TO-DATE CHEMISTS

Should turn to page 36 in this year's CHEMISTS' AND DRUGGISTS' DIARY, where we give two reasons why all Chemists should have an annual "STOCKTAKING."

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**LONDON, S.E.**—Modern Cash Businesses in main marketing thoroughfare; returns £15 weekly, yielding £5 clear profit; splendid corner position, handsome shop, lined with mirrors and lighted with electricity; good house, with lawn, yard, private entrance, &c; grand opening for Dentistry; price £450. [65]

**NEAR THE CRYSTAL PALACE.**—Neglected Retail and Dispensing Business; returns £550, easily increased; good 10-roomed house and splendid business premises on corner opposite station; rent £45, on long lease; sacrificed through illness for less than value of stock and fixtures, about £450; part may remain. [73]

**KENT.**—£450 will buy a profitable Family Business in small country town; very easy hours; returns £651, yielding £170 net profit; fine garden and good 3-roomed house; every investigation; rent £35, on lease. [70]

**LONDON, N.**—Rare bargain at £150; Retail and Dispensing, in business thoroughfare, returning over £600; good house and nice shop, well fitted and stocked; suit a pushing man. [58]

**MANCHESTER (near).**—Very good-class Retail and Dispensing Business, returning about £1,250, and yielding £400 clear profit; rent only £50; price £750, of which £250 can remain at 5 per cent. interest. [48]

**NORFOLK (Market Town).**—Good Retail and Dispensing Business returning £500, at good prices; rent £55, on long lease; house of 7 rooms, garden, &c.; well fitted, and fully stocked; price £475, which is less than value of stock and fixtures. [44]

**SEASIDE TOWN (Kent).**—General Retail and Dispensing; returns £1,300; net profit £400; price £1,200; Mineral-water Factory attached; horse, van, cart, bottles, syphons, machinery, gas-engine, &c. [132]

Messrs. JUDD & MANNERS undertake every description of Accountancy. Books Opened, Posted, Investigated, Audited and Certified. Balance Sheets prepared showing the trading results and gross and net profits, &c., for Wholesale or Retail concerns in any part of the United Kingdom. References permitted to past and present Clients, also to the Leading Wholesale Houses in the Trade.

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Valuations conducted with careful attention to detail.

Our system in disposing of Businesses for clients is to keep the matter as private and confidential as possible, avoiding publicity and "curiosity" inquiries, in many cases having sold to the applicant on our books first notified, we knowing just the class of concern he required and was waiting for.

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CHEMISTS' VALUER AND ACCOUNTANT

56 Hanover Street,

LIVERPOOL.

## APPRENTICESHIPS.

**RUNCORN.**—Wanted, a gentlemanly, well-educated youth as Apprentice; must have passed Prelim. or equivalent; Dispensing, Photographic, and General Retail. Weston, Chemist, Runcorn.

**APPRENTICE.**—Wanted, a gentlemanly youth as Apprentice; indoors; excellent opportunity for learning the trade; hours 8 to 8.5; 8 to 7 Wint. R., Thursday 1; facilities given for study; low premium. E. D. Jones, M.P.S., Medical Hall, Llangollen.

**WANTED.** gentlemanly youths as Apprentices, or Turnover Apprentices, in a good Dispensing business; comfortable home, and every facility for acquiring a good knowledge of the business. Apply, H. H., 175 West End Lane, W. Hampstead, London, N.W.

TO SUBSCRIBERS ABROAD.

We desire particularly to draw the attention of Colonial and Foreign Subscribers to the fact that in cases where they require partners, agents, or assistants, or wish to sell their businesses, an advertisement in this Supplement, placed in every copy of "The Chemist and Druggist," should be the readiest means of helping them to attain their object. The tariff for such announcements is given under the appropriate headings in the Supplement. Instructions and remittances can be sent to us direct or through the advertisers' correspondents in this country.

BUSINESSES FOR DISPOSAL

3s. 6d. for 50 words or less; 6d. for every 10 words beyond

**BIRMINGHAM.**—For Sale, good cash General Retail and Dispensing Business; long lease; convenient house; proprietor having purchased another business is prepared to sell for valuation and goodwill to be agreed by valuers; price about £530. Address "Chemist," 165 Hagley Road, Birmingham.

**KENT.**—In main street of busy town. Family, Retail, and Dispensing Business; old established, with good connection; obtaining good prices; returns nearly £700; low rent; net profit one-third clear; price £560. B. O. (17/7), Office of this Paper.

**LONDON, S.W.**—Main road; good cash Dispensing and Family Retail for disposal; long lease; splendid opportunity for one desirous of purchasing a genuine and lucrative business. Apply, by letter, X. Y. Z., Willows, Francis & Co., 40 Aldersgate Street, E.C.

**NEAR MANCHESTER.**—Business, established over 50 years, for sale, owing to ill-health; splendid opportunity; best position in town; window in each of the two principal streets; returns about £10 weekly; can easily be increased; profitable; 5 years' lease; rent £45; terms valuation; introduction given; Apprentice knows business; inspection invited. 12/6, Office of this Paper.

**OLDHAM.**—Paradox Pharmacy for immediate disposal, owner going abroad; returns £700, valuation £500; stock can be reduced to suit buyer, or will accept reasonable offer; must be sold at once. Apply, Thorp, c/o Mrs. Drake, Knutsford.

**SHEFFIELD (Suburb).**—Mixed Light Retail and Prescribing Business; very profitable; returns under wife's management. £250, easily doubled; good house of 7 large rooms in own grounds, gardens, poultry runs, &c.; fine country around; rent £20 on lease, an exceptional opportunity. Apply, Judd & Manners, the Vendors' Agents, 76 Cannon Street.

**SOUTH OF ENGLAND.**—Death vacancy.—Market town, within 50 miles of London; first-class Light Retail and Dispensing Business; returns over £2,000, with every prospect of considerable increase under energetic management; applicants must be able to pay down £1,500 cash; strictest investigation offered. "Exor." (18/10), Office of this Paper.

**SOUTH-WEST OF ENGLAND (market town).**—The proprietor of a good class Retail and Dispensing Business (some photographic), returning £900, during continued ill-health, wishes to meet with a suitable successor; will accept £600, which is a sacrifice; good 8 roomed house with bath and garden; excellently fitted and stocked; clear profit of quite £250. H. R. H. (18/25), Office of this Paper.

**STAFFORDSHIRE.**—Mixed Drug and Dry Grocery Business, with Post Office attached, together with the premises, which comprise a compact double-fronted corner shop and excellent dwelling-house with side entrance, good yard, &c.; improving and growing suburb; stock and fixtures at valuation. Address, W. H. Bleasdale & (Limited), York.

**VALLEY OF THE SEVERN (Gloucestershire).**—Good Retail, Dispensing, Prescribing and Agricultural Business (no heavy), sadly neglected and let down; returns £550; net profit £200; good 9-roomed house and garden; capital double-fronted shop, nicely fitted, and thoroughly stocked; price £450, a bargain; moderate rent; suit a smart man, who would pull the trade together again. "Wheatseaf" (18/23), Office of this Paper.

**WALTHAMSTOW.**—Snug Retail Business for immediate disposal; been neglected, but a genuine living assured; owner not a Chemist; has other appointment; accept £50 down, and £50 by instalments, less cash; best investment going for small capitalist. Those meaning business, address "Opportunity" (17/37), Office of this Paper.

**WILTSHIRE.**—£100 will purchase outright a genuine Retail and Prescribing Business returning £5 to £6 weekly; rent is low, and there is a good house; stock and fixtures worth more, but must be sold at sacrifice, having accepted an appointment. Address, "Wilts" (18/6), Office of this Paper.

**THOROUGHLY** good Light Retail and Dispensing Business, at a well-known seaside resort, Lancashire, in an exceptionally good position in the best residential part of the town; returns over £800; rent owner retiring; good house, on lease. Address, X. Y. Z. (13/4), Office of this Paper.

**CHEMISTS** Businesses for Sale in Stirlingshire.—1. Situate in principal thoroughfare of busy manufacturing town; stock light; terms moderate; business capable of large increase under energetic management. 2. Small Business, in rising locality of inland town; stock and fittings at mutual valuation, probably about £100; rent easy; good centre for young man. Further particulars on application to Raimes, Clark & Co., Edinburgh.

**EXCEPTIONAL** chance of securing capital paying little business, doing £450 yearly, more than half profit; main road, densely populated district, London; genuine reason for disposing nice little house; shop well stocked, price £100 down and £50 by weekly payments, or £125 to immediate purchaser. 18/21, Office of this Paper.

**GENUINE** Business for immediate Sale (N.).—Light Retail, Prescribing, and Dispensing, in good locality; only changed hands once in 45 years; returns now £10 per week; if Dentistry added, will double by end of year; proprietor is leaving the trade altogether; shop very nicely fitted and well stocked; price £350. "Statim" (15/16), Office of this Paper.

**TO** anyone desiring a comfortable and easily-worked Country Family Business in South of England, there is an excellent opportunity of obtaining one in a healthy country town, recommended by doctors as a residence; about £450 capital required; scope for increase; full particulars to buyers with cash only; references required. 13/14, Office of this Paper.

**TO** Chemists and Dentists.—For Disposal, through failing health of principal, an old-established Dental practice, in London suburb; every investigation courted; references given and expected; proper introduction; good opportunity for one opening a Pharmacy who understands Dentistry. Apply, "Dentist" (18/9), Office of this Paper.

**£130** required for Retail Business, situated in main business thoroughfare, North-Eastern suburb; the shop is well stocked, and fitted with mahogany; returns £206; net profits £130; rent £35, can let off. G. S. S. (14/9), Office of this Paper.

BUSINESSES WANTED

3s. 6d. for 50 words or less; 6d. for every 10 words beyond.

**MIDLAND OR NORTH OF ENGLAND.**—Gentleman wishes to purchase a good Business, immediately; will pay goodwill for suitable concern in healthy locality; returns about £1,000, or smaller if neglected and room to increase, but a large business preferred. Apply, in first instance, to "Chemist," 37 Silverdale, Sydenham, Kent.

**A GENUINE** small Business, in the suburbs of London, not more than 30 miles from City; a neglected one preferred; nobody with business in agents' hands need apply; purchaser would undertake a management, with the option of purchase, if satisfactory; good bonus paid for information for opening, if acted upon. "Ready-money" (17/38), Office of this Paper.

**WANTED,** a good-class Business, showing net profit of about £200 per annum, situate in town on or near the coast; must have convenient house attached, with moderate rent, and open to investigation. Replies to "Dart" (15/28), Office of this Paper.

TO LET

3s. 6d. for 50 words or less; 6d. for every 10 words beyond.

**COMMANDING** corner Shop, suitable for Chemist and Post Office, to be Let or Sold; no similar business or Post Office within 3 miles; densely-populated and rising district. Inquire, Green & Twilley, Builders, Wandle House Estate, South Street, Wandsworth.

**HOUSE** and Shop to Let; no valuation; immediate possession; shop has been occupied by a Chemist for 19 years; good position; main thoroughfare; rent £30. For particulars, apply, Jas. A. Brier, Savile Town, Dewsbury.

**TO** Chemists and Druggists.—Shop to be Let in main road; rapidly-increasing neighbourhood; no opposition; excellent position; lease 7, 14, or 21 years, at £55, £60, and £65. Apply, Jas. Wright, 355 High Street, Plumstead.

**TO** Chemists, Druggists, and others.—To be Let, at once, a double-fronted Shop, in Byfleet, Surrey, on main road, in a rising village of 1,700 inhabitants, 20 miles from London; there is a good opening; no other shop nearer than 3 miles. Apply, William Arkell, Binfield House, Byfleet, Surrey.

BOARD AND RESIDENCE.

3s. 6d. for 50 words or less; 6d. for every 10 words beyond

**COMFORTABLE** home offered to Minor student in nice, quiet house, within easy distance of Colleges; terms 13s. 6d. weekly, washing extra only. 18/1, Office of this Paper.

## SITUATIONS OPEN.

3s. 6d. for 60 words or less; 6d. for every 10 words beyond.

*The Publisher of "The Chemist and Druggist" wishes it to be understood that he is not in any way responsible in respect of Advertisements answers to which are to be sent to this Office.*

*Assistants applying for any of the Situations advertised below are recommended in no case to send Original Testimonials. If they send Photographs or any Documents which they wish to have returned, a Stamped Addressed Envelope should be enclosed.*

Advertisers whose Announcements appear under this heading can make arrangements to see applicants for the situations at our Offices, by giving a few days' notice to

THE PUBLISHER, 42 Cannon Street, E.C.

### RETAIL.

**ABERDARE.**—Wanted, immediately, a qualified Assistant for a Light Mixed Drug business (Wc'sb); indoors; state age and salary required. Apply, Smith Bros., 70 Mill Street, Aberdare.

**ALTRINCHAM.**—Qualified Junior, end of August, in first-class Dispensing and Family Retail; in or out doors. Apply, stating age, height, experience, reference; salary required, and enclose photo, personal interview preferred, J. W. Read, 44 Railway Street, Altrincham.

**BATH.**—Wanted an active Junior Assistant (indoors); well up in Dispensing. Please state age, height, salary required, and references, with photo (if convenient), to R. Dunn, Chemist, Bath.

**BEXHILL-ON-SEA.**—Wanted, a Junior Assistant, in a first class Dispensing business; time for study could be arranged if required. Apply, stating salary required, to F. Wimbushurst, Pharmaceutical Chemist, Bexhill-on-Sea.

**BIRMINGHAM (near).**—Wanted, a Junior or Improver (indoors) for a Light Retail and Prescribing Business, close Wedne. days; comfortable home. Apply, stating salary expected, references, and photo, if possible, to E. C. 11 Coventry Road, Hay Mills, Birmingham.

**BOURNEMOUTH.**—A qualified Assistant, accustomed to Dispensing and Light Retail business. Please state full particulars and salary required, to S. Hardwick, Commercial Road, Bournemouth.

**CAPE TOWN.**—A reliable Assistant with Minor qualification, required at once, aged about 24; second-class passage paid out; salary, first year, £8; second year, £10. third year, £12; indoors; 3 years' engagement. Apply, "Export," Southall Bros. & Barelay (Limited), Birmingham.

**CARDIFF.**—Wanted, competent Assistant, about 24; neat and accurate Dispenser. Please state age, height, references, and salary required (outdoors), photo, Duck & Son, Chemists, Cardiff.

**CARDIFF.**—Qualified Manager wanted, capable of working up a neglected branch; must be well recommended as trustworthy and competent, of energetic business habits; good Prescriber and Extractor; salary and commission on net profits. Send full particulars, with references, to 17/3, Office of this Paper.

**DONCASTER.**—Early in October, an indoor Assistant, about £2 to £4, for a good-class General Family business. Apply, with full particulars of age, height, previous experience, &c., to M. H. Stiles, Pharmaceutical Chemist, Doncaster.

**DROYLSDEN.**—Reliable man; good Extractor and Prescriber essential; house with shop. Full particulars and salary expected, to Griffiths, Chemist, Droylsden.

**DURBAN.**—Qualified Assistant wanted; salary £15, £16, £17 per month for 1st, 2nd, and 3rd years respectively; agreement to be signed; second class passage paid; room supplied but not board. Apply, E. A. F. (18/7), Office of this Paper.

**EAST GRINSTEAD.**—Locum wanted, at once, for about 3 weeks; indoors. Full particulars of experience, age, height, salary required, &c., to H. S. Martin, High Street, East Grinstead.

**EXETER.**—Wanted, Junior Assistant, outdoors, for end of September. Milton & Son, Pharmaceutical Chemists, 265 High Street, Exeter.

**FOREST GATE, E.**—Wanted, Junior or Improver (indoors), for good-class business; time for study. Apply, stating full particulars and salary required, to Skeates, Cash Pharmacy Stores, Forest Gate, E.

**GAINSBOROUGH.**—Junior Assistant wanted, in or out door; state salary and usual references. Burrows, Chemist.

**GREAT YARMOUTH.**—Unmarried Assistant wanted, with not less than 10 years' experience; amateur Photographer preferred; hours 8 till 8.30; Saturdays 10.30; half-holiday weekly; no Sunday or night duty; salary £50 indoors. Send photo and 2 references, and say when disengaged, Ebbage, Dispensing Chemist, Gt. Yarmouth. Vacancy for an Apprentice.

**GLOUCESTER.**—Wanted, Junior Assistant (outdoors) for Light Retail and Dispensing business; state age, height, salary, with photo (to be returned), and reference. Apply, Ward, Chemist, Gloucester.

**HEREFORD.**—Junior Assistant, about 20, for Light Retail and Dispensing; outdoors; no Sunday duty. Apply, with usual particulars, to Walker, Hereford.

**HUDDERSFIELD.**—Wanted, Junior Assistant. State age, height, salary required, and give references, to King, Walshaw & Co. (Limited), Obemists, Huddersfield.

**HULL.**—Unqualified Assistant wanted. State age, references, and salary required to G. Myers, Chemist, Carlisle Street, Hull.

**HULL.**—Qualified Assistant (outdoors), last week in September for Retail and Prescribing business; one who can extract teeth preferred but not essential; good counterman; must have good references; no Sunday duty. State age, salary required, &c., Humber Drug and Dispensing Co. (Lim.), 76 Porter Street, Hull.

**KENT.**—An Assistant; good Extractor; trustworthy, competent man; to live on business premises; unfurnished house. State age, and salary required, W. T. Tucker, The Medical Hall, Dartford.

**LEEDS.**—Junior Assistant; qualified; about 22; hours 9 to 7; Sundays, one in five. Apply, giving full particulars as to experience, salary required, height, &c., and enclose photograph, to Reynolds & Branson (Lim.), Leeds.

**LINCOLNSHIRE.**—Junior; outdoors; easy hours; weekly half-holiday; no Sunday duty. Full particulars, with salary required, to "Cascaer," (14/8), Office of this Paper.

**LONDON, E.**—Wanted, qualified Assistant (outdoors), on September 24; a quick, energetic man, strictly sober, experienced in modern Cash trade; to a suitable man, 45s. weekly at first, with dinners and teas; undoubted references essential. Ga mau Bros., 278 Roman Road, Bow, E.

**LONDON, S.E. (near Crystal Palace).**—Wanted, Assistant, used to Store business preferred; indoors; 2 hours off daily; half-day weekly; alternate Sunday evenings; salary £50, or other part time could be arranged.

**LONDON, W.**—Competent Assistant; outdoors; well up in Dispensing; aged 20 to 25 years. Apply, personally preferred, or if by letter enclose carte and full particulars, to H. H. Long, 48 Dorset Street, Baker Street, W.

**LONDON, E.**—Manager wanted, at once, must be qualified, and a good Counterman, to take sole charge of branch; married or single; outdoors; state salary. Apply to J. Colman & Co., 36 Whitechapel Road, E.

**LONDON, N.**—Junior, for Light Retail and Dispensing business; one leaving apprenticeship entertained. Apply, with full particulars reference &c., 155 High Street, Stoke Newington, N.

**LONDON, N.W.**—Wanted, Junior Assistant; indoors, sleep out; 2 kept; time for study. Apply personally, or by letter, with photo, giving full particulars, to O. Coutts Michie, 175 Kentish Town Road, London, N.W.

**LONDON, S.W.**—Assistant; outdoors; no Sunday work; half-day weekly. Durbin, High Street, Putney.

**LONDON, S.E.**—Qualified Assistant (indoors) for Cash trade; no Sunday duty; close Thursdays at 5. Apply, "Obemist," 12 Dartmouth Road, Forest Hill, S.E.

**LONDON, S.E.**—Wanted, Junior or Improver (indoors), aged about 21 or 22 years; good opportunity for gaining all-round experience in Family and Dispensing business. Apply, Cadman & Co., Obemists, 2 Langton Terrace, Blackheath, London, S.E.

**LONDON, S.W.**—Junior wanted, immediately; outdoors; aged about 20; must have experience Dispensing, Photography, and good-class Counter trade. State age, experience, salary expected, and when disengaged, "Junior," 18 Upper Tooting Road, London, S.W.

**LONDON, W.C.**—Competent Assistant wanted at once; outdoor; no Sunday duty; must be first-class Counterman, steady and obliging. Apply, personally only, G. S. Boutell, Chemist, 52 Marchmont Street, W.C.

**LONDON, S.W.**—Wanted, immediately, qualified Manager (married), used to first-class Store trade; also smart Junior, about 20, live out. State all particulars of experience and salary required, to "Stat.m," 18 Upper Tooting Road, S.W.

**LONDON, S.W.**—Wanted, a good Counterman, used to good Store trade; no Sunday work; close at 2 Wednesdays. Francis & Son (Limited), 450 Brixton Road, S.W.

**MANCHESTER.**—Qualified Assistant. Apply, with full particulars, to J. O. Kidd, Chemist, Chacetbam Hill, Manchester.

**MANCHESTER.**—A qualified Assistant, not over 23; gentlemanly, and of steady, quiet habits; one who has been apprenticed in good Dispensing business preferred. Address, stating age, height, experience and where gained, photo (return), and salary, to "Ph.C.," Messrs. McQuarter & Co., 7A Peel Street, Manchester.

**MANCHESTER ROYAL INFIRMARY.**—Junior Assistant Dispenser required on October 1; non-resident; Minor qualification; not over 30 years of age; salary £90 per annum; hours 8.30 to 6. Apply to General Superintendent.

**PONTYCYMMER.**—Assistant, to manage Branch; must be able to speak Welsh; abstainer; aged about 25 to 30; must have good references. Apply, with photo, to J. L. Hopkins, Pontycymer.

**RHYL.**—Locum.—Wanted, Locum, for first two weeks in October; must be thoroughly reliable. Apply, Ashfield, Chemist, Rhyll.

**ROCHDALE** (outdoors).—Wanted, at once, Junior Assistant, no Sunday duty; half-holiday weekly. Full particulars of experience, age, height, salary, &c., to John Taylor, Chemist, Rochdale.

**RYDE, I.W.**—An Assistant (indoors), accustomed to good-class Retail and Dispensing. State age, height, and salary, to Tenison Smith, Ryde, I.W.

**ST. LEONARDS-ON-SEA.**—Junior or Improver wanted (indoors), for Light Retail and Dispensing. State age, height, references, and salary required, enclosing photo, to T. W. Jones, 71 Bohemia Road, St. Leonards-on-Sea.

**SHANGHAI.**—Qualified Assistant wanted for old-established business; young Scotchman preferred; 4 years' agreement to be signed; salary £10 sterling per month for first year, £11 second, £12 third, and £13 fourth; board and lodging provided, but no liquors; second-class passage paid. Apply, stating experience, to "Shanghai," c/o Messrs. John Murdoch & Co., 52 Leadenhall Street, E.C.

**STAMFORD HILL AND STOKE NEWINGTON DISPENSARY.**—Wanted at once, a Dispenser for 3 hours a day (from 11 A.M. to 2 P.M.). Applications to be made to the Senior Resident Medical Officer, stating salary required.

**TENBURY.**—J. Slade wishes to meet with a trustworthy Junior, of punctual and steady habits. Applicants will please state age, salary (outdoors), with reference, &c.

**TRINIDAD.**—Dispenser, fully qualified, wanted, for Trinidad, West Indies; aged about 25; total abstainer preferred; salary £80, £90, and £100 per annum (3 years' engagement), with board, lodging, washing, medical attendance, &c.; passage paid out. Apply, by letter, stating experience and full particulars, to E. X. O. (14/19), Office of this Paper.

**WALTHAMSTOW.**—Wanted, Junior Assistant (indoors), for Light Retail and Dispensing; must have had good experience; personal interview preferred, or if by letter, usual particulars will oblige. Devereux, 180 Wood Street, Walthamstow.

**WESTON-SUPER-MARE.**—Wanted, a Junior; indoors; accustomed to good-class Retail and Dispensing business. State age, height, reference, salary, and enclose photo, to Edwin Norman, Pharmacist, 35 High Street, Weston-super-Mare.

**A. E. WOODRUFF,** Eastry, S.O., Kent, has a vacancy for Improver or Junior in Mixed business; state age, references, and salary required, enclosing carte where possible.

**ASSISTANT,** unqualified, for Dispensing; 4 years' experience; disengaged about middle of October; good references. A. B., Mr. Sinclair, Chemist, Ellesmere.

**ASSISTANT,** to take charge of suburban Branch (slightly Mixed); live in house. Apply, stating age, references, if Extractor, salary required, &c., to S. A. Perkins, 15 Cumberland Street, Devonport. Send photo.

**ASSISTANT** wanted, South Coast. State age, salary, and usual particulars, Long, 128 Upper Clapton Road, London.

**IMPROVER** wanted; aged about 20; 3 or 4 years' experience; outdoors. 15/12, Office of this Paper.

**JOHN R. LYNN,** 170 Holland Park Avenue, requires a competent Assistant, about 22 years of age.

**JUNIOR** Assistant wanted; who has had London experience in first-class Retail and Dispensing. Trotman & Co., 16 Cambridge Street, Hyde Park Square, London, W.

**LADY** Chemist, with good experience, wanted for a Wholesale and Manufacturing House; Major qualification preferred. Address, with full particulars, to "Chemist," c/o Mather & Crowther (Lim.), 10 to 12 New Bridge Street, E.C.

**MESSERS. HOWARD & SON,** Pharmacists, Tunbridge Wells, require a Junior Assistant early in October; one accustomed to a high-class Dispensing business. State usual particulars and salary required, enclosing photo, which will be returned.

**PATENT** Medicines and Perfumery; thoroughly competent young lady wanted to take the lead in department; permanency; 25s. per week with dinner and tea paid, first-class hand; short hours; high class. Broadbent's (Limited), Southport.

**QUALIFIED** Manager wanted, for small business (seaside) unfurnished; apartments found over business premises. Apply, with full particulars, to Ruthven, c/o Messrs. Wright, Layman & Umney, 50 Southwark Street, London, S.E.

**SEPTEMBER 18.**—Wanted, an Assistant used to Country business, and with some knowledge of Photography; indoors. Apply, with full particulars and carte, to John Betts & Son, Woodbridge, Suffolk.

**SMART** Counter hand, qualified or otherwise; aged about 30; single or married; permanency. Address, 14/21, Office of this Paper.

**TURNOVER** Apprentice or Improver, for Light Retail business, in healthy seaside town (Lancs); one who has served part-time not objected to; comfortable home; time for study. Apply, with full particulars, to "Statim" (17/11), Office of this Paper.

**TWO** smart qualified Assistants wanted, about 30 and 40; must be good Prescribers; hours 8.30 to 10 P.M., Thursdays 2, Sundays 6 till 9 P.M. Apply, personally, at Worboys & Son, M.P.S., 76 New Out, S.E.

**WANTED,** qualified Assistant (indoors), to take charge of Branch. Apply, with usual particulars, to R. Pheysey, Waterloo, Liverpool.

**WANTED,** for West-end high-class Oash business, a good Junior; good salary and commission. Apply, personally, if possible, or if by letter, please enclose photo, to Lewis & Burrows (Lim.), 22 Great Portland Street, W.

**WANTED,** by October 1, Manager for Branch Light Retail and Dispensing; qualified; married preferred; to live on premises. Apply, with full particulars, to Gregory & Wrenn (Lim.), East Street, Taunton.

**WANTED,** qualified Assistant; outdoors; good all-round experience; single. State fullest possible particulars, in first letter, to save time, 15/11, Office of this Paper.

**WANTED,** about the commencement of October, in good-class business, a thoroughly competent Assistant, to take entire charge; one understanding Photography and Water-analysis essential; good appearance and tall; interview preferred. Apply, with usual full particulars, to 17/34, Office of this Paper.

**WILCOX & CO.,** 49 Haymarket, S.W., require a Junior Assistant for Stock, and to assist at counter; salary £9 a month (outdoors).

**A GENTLEMAN** requires tuition, during one or two evenings a week, in practical Electro-metallurgy; own laboratory and apparatus. Reply, C., 4 Eastcombe Villas, Blackheath, S.E.

## WHOLESALE.

**A FRENCH** Perfumery Manufactory seeks representatives for London and Provincial towns to sell its excellent Extracts of Flowers in bulk; those who have a sound and large customership amongst Chemists, Stores, &c., may apply by letter, stating references and particulars, under "Parfums" (250/8), Office of this Paper.

**ANALYTICAL.**—Brady & Martin require a Junior Assistant in their Analytical Laboratory; must be accurate and painstaking, and have had training and experience in the Analysis of all Pharmaceutical Compounds. Apply, stating age, experience, and salary required (outdoors), to Brady & Martin, Northumberland Road, Newcastle-on-Tyne.

**PILL** Department.—Wanted, a Youth with experience in Pill-making. Apply, General Apothecaries' Company, 49 Berners Street, London, W.

**PILL-ROOM.**—Wanted, a young man, used to Making and Rounding Pills by steam machinery. Apply, Willows, Francis, Butler & Thompson, 40 Aldersgate Street, E.C.

**PHOTOGRAPHIC.**—Brady & Martin require a Junior Assistant in their Photographic Department at 29 Mosley Street. Apply, stating age, experience, salary required (indoors), and references, to Brady & Martin, Northumberland Road, Newcastle-on-Tyne.

**SURGICAL.**—Brady & Martin require an Assistant in their Surgical Instrument Department; must have a good knowledge of Instruments and be a good Salesman. Apply, giving age, experience, salary required (outdoors), and references, to Brady & Martin, Northumberland Road, Newcastle-on-Tyne.

**TO** French speaking Pharmacists.—A vacancy will shortly occur on the travelling continental staff of a London manufacturing firm, for a capable man, of sound experience and judgment; must be a good linguist, and know continental methods and ways. State experience, salary, age. Apply, 172/41, Office of this Journal.

**TRAVELLER** wanted, calling on Chemists and Druggists, for a good side-line; handful samples only; large commission. 18/11, Office of this Paper.

**WET-COUNTER** man required for Wholesale department of Provincial House; must be thoroughly reliable, energetic, and accurate; permanency for suitable person. Apply, "Rowlands" (16/2), Office of this Paper.

**WHOLESALE** Drug Trade.—Required an Invoice Clerk. State age, salary and experience, to "Invoice" (174/47) Office of this Paper.

**WHOLESALE** Druggist's Warehouse.—Vacancy for man, aged about 21, in Patents and Sundries Department; must have had good experience, and used to putting up orders; Saturdays 2 P.M.; permanency to suitable applicant. State age, salary required, and references, to Day's Drug Company (Limited), 80 Borough Road, S.E.

## SITUATIONS WANTED

1s. for 12 words or less; 6d. for every 6 words beyond.

## RETAIL

- LOCUM**; experienced; disengaged September 20. Reed, 51 West Street, Boston.
- LONDON**; outdoors; qualified; 30; good experience. 17/40, Office of this Paper.
- QUALIFIED**; 24; disengaged; good references. F. B., 23 High Street, Abingdon.
- LOCUM**; qualified; 23; London preferred; about a month. 17/9, Office of this Paper.
- JUNIOR** (23) wishes situation; London experience. Apply, "Alpha," 33 Rutland G.te, W.
- EVENING** Dispensing by Major Student; 22. "Student," 3 The Broadway, Herne Hill.
- AS** Dispenser to Surgeon; country preferred; good reference. Butteris, 487 Lrdship Lane, S.E.
- LOCUM**; disengaged September 14; qualified. J. R., 166 North End Road, West Kensington, W.
- EVENINGS**; Chemist or Doctor; West-End experience. Davies, 5 Olitheroe Road, Clapham.
- COUNTER** hand, in good-class Store; 25; qualified. "Business" (16/4), Office of this Paper.
- LOCUM**; qualified; 27; good class experience; good references. "Statin," 151 Brixton Road.
- L.T.**; 50; qualified; town or country. Baker, 58 Protneroe Road, Fulham, S.W.
- MANAGER** temporary or permanent; disengaged. M. P. S., 23 Lindore Road, Battersea Rise, S.W.
- £2** weekly, indoors, and return fare; disengaged. "Locum-Tenens," 21 Jubilee Road, Southsea.
- DISPENSER**; 21; unqualified; outdoors; also assist at Counter. W. Henderson, Keswick, Cumb.
- LOCUM**; disengaged September 22; excellent references. Ross, 5 Denbigh Street, London, S.W.
- DISPENSER** to Surgeon; London; experienced. S. Holliday, 38 Lower Church Street, Warwick.
- DISPENSER** (Lady); qualified; Locum or permanent. G., 19 Glyn Mansions, Addison Bridge, W.
- JUNIOR**; London; time for classes. State hours and full particulars, W. S., 10 Bridge Street, Newark.
- ASSISTANT**; disengaged September 10th; mixed; 34; good references. F., 387A Limefield, Bury.
- LOCUM** or Dispenser; qualified; Chemist or Surgeon; disengaged. W. M., 40 Manchester Street, W.C.
- JUNIOR**; 21; tall; good experience; satisfactory reference. F. Hopkins, Broad Oak, Leighton Buzzard.
- JUNIOR**; 21; disengaged; country business preferred; outdoors. "Radix," 166 Sheffield Road, Barnsley.
- PART-TIME** engagement; three or four evenings weekly; West-end preferred. S., 189 Wardour Street, W.
- MANAGER**; good Prescriber and Dispenser; married; 35. "Kodak" (13/15), Office of this Paper.
- LOCUM**; disengaged September 10; qualified; town or country. Carroll, 36 Windmill Street, Gravesend.
- JUNIOR**, aged 18, as Impr. ver; indoors; 4 years' experience in country business. Venables, Medical Hall, Tenbury.
- MANAGER** or Assistant; qualified; 48; single. "Chemist," 10 Crown Street, Wellington, Shropshire.
- ASSISTANT**; twelve years' good experience, town and country; outdoors. S., 56 William Street, Herne Bay.
- LOCUM**; 27; qualified; disengaged; excellent experience; references. "Pyro," 73 Princes Road, Notting Hill, W.
- PERMANENCY** (City)—Strand experience; tall; abstainer; 22. "Locum," c/o Rutherford, Ivybridge, Devon.
- MANAGER** or Branch Manager; married; qualified; good references; 30. Bynes (18/17), Office of this Paper.

**MANAGER**, qualified, with view to succession. R., 166 North End Road, West Kensington.

**DISPENSER**, quick, accurate, highest references, wishes engagement. "Rhei," 345 Victoria Park Road, N.E.

**ASSISTANT**; 10 years' varied experience; good Extractor, and references. A. Goodwin, Penkridge Road, Cannock.

**AS** Manager; London and Colonial experience; abstainer; qualified; aged 29. "Etam" (14/35), Office of this Paper.

**QUALIFIED** seeks permanency; varied experience; disengaged 14.h. "Energetic" (16/36), Office of this Paper.

**FRANCIS & CO.**, Chemists, Wrexham, can recommend a Junior; Manchester, Birmingham, or Liverpool preferred.

**ASSISTANT**; 27; unqualified; married; good experiences and references. Smith, 57 Denham Road, Egham, Surrey.

**MANAGING** Assistant or Locum; high-class; £8; disengaged October. Duff, Westholme, Cliftonville, Margats.

**LOCUM**; 31; experienced; highest references; disengaged September 24. Sleigh, M.P.S., 21 Lichfield Street, Wal all.

**FRANCIS & CO.**, Chemists, Wrexham, can strongly recommend a Junior; tall; aged 21; full particulars on application.

**PERMANENCY** required by experienced Manager; first-class references. "Kodak," 15 St Margaret's Street, Canterbury.

**QUALIFIED**; 27; brisk business; London or large town; varied experience. "Chemist," 56 Redman's Road, Stepney, E.

**OCTOBER**—Manager or Senior; 27; tall; good experience; excellent references. R. M. Gordon, 45 High Street, Kensington.

**BRANCH** Manager; qualified; 31; Dispenser, Prescriber; 8 years' best London Stores experience. 16/25, Office of this Paper.

**MANCHESTER** or District.—Junior (25), unqualified, with time for study and classes. S. Harrop, Rose Hill, Ashton-under-Lyne.

**LIVERPOOL**.—Part-time; outdoors; good experience; aged 22. H. D., c/o McNab, Fern Lea, Belford Road, Walton, Liverpool.

**COUNTY** **ERMAN**; aged 29; height 6 ft.; good refs.; please state terms; disengaged. C. Michell, 85 Victoria Dock Road, Essex.

**LOCUM**; Major; 28; first-class West End and Provincial experience; height 5 ft. 10 in.; disengaged 10th. 16/37, Office of this Paper.

**DISPENSERSHIP**, in first class business; qualified; 10 years' experience; highest references. Johnson, 2 Fram Villas, Bognor.

**JUNIOR**; energetic, willing; knowledge of Photography; height 5 ft. 2 in.; good reference. "Velox" (15/22), Office of this Paper.

**ASSISTANT**; 24; 5 ft. 9 in.; 10 years' South Coast and Provincial experience; outdoors. "Velox," 117 Union Road, Byker, Newcastle.

**MANAGER** or otherwise; Mixed country or suburban business; outdoors; aged 39; qualified. M., 26 Fulham Road, Sparkhill, Birmingham.

**MANAGER** or Senior; competent, reliable; good experience; 31; 5 ft. 10 in.; married; disengaged. "Veritas," 139 Church Road, Canonbury, N.

**MINOR** Student (23), desires Part-time engagement in London as Assistant or Dispenser; good experience and references 16/16, Office of this Paper.

**TEMPORARY** or permanent Management, or Dispenser to Institution; Associate; smaller salary permanency; disengaged. 16/31, Office of this Paper.

**MANAGER**; live over premises; genuine permanency; married; 25; good references; disengaged September 25. Gregory, 91 Hampstead Road, London.

**DISPENSER** (Lady); qualified; experienced in hospital and private work; Bookkeeping, Typewriting; good testimonials. Boys, 82 Statton Road, Ipsom.

**DISENGAGED** 4th; temporary or otherwise; experienced Manager; good Prescriber, Dispenser, Extractor, &c.; qualified; single. W., 2 Raglan Street, Lowestoft.

**LADY** Dispenser; qualified; at present in charge of two London Dispensaries; good references; disengaged September 10. K., 196 The Grove, Hammersmith, W.

**JUNIOR** (20), out of time in October, requires engagement; Photographic and Dispensing; country preferred. A. J. Gardner, 15 Thane Villas, Holloway, London, N.

**ASSISTANT** Manager; 36; 18 years' best all-round experience; smart Counter-hand and Prescriber; temporary or permanent. "Trix," 270 Barking Road, Plaistow, E.

**ASSISTANT**, 3 years with present employer, desires situation, Retail or Wholesale; Extractor; excellent references. Address, "Saloi," 28, Upper Clara Street, Rotherham.

**LOCUM** or permanency; disengaged Sept. 8th; Major qualification; Prescriber; Extractor; Dispensing counter preferred. M., 301 Halley Road, Manor Park, London, E.

**MANAGER** (qualified, 28, tall, single), seeks permanency, outdoors; Agricultural or Mixed business; Photography; no Drug Stores. "Radix" (9/26), Office of this Paper.

**JUNIOR**; 21; as Assistant Dispenser; West-end preferred; previous London experience; disengaged shortly; satisfactory references; personal interview. 16/23, Office of this Paper.

**UNQUALIFIED**; married; aged 29; experienced; sharp Counter, Photography, &c.; Eastern district preferred. Apply, "Rhei," c/o Weston, 94 Marlboro' Road, Upper Holloway.

**ASSISTANT**, or Manage Branch; competent; disengaged; energetic and obliging; good Counterman; excellent references; London; outdoors preferred. H. J., 23 Hampstead Road, N.W.

**LOCUM**.—Retired Pharmaceutical Chemist, seeking short engagements, disengaged September 20; abstainer; Prescriber, Photography; references. "Chemist," 45 New Walk, Leicester.

**BRANCH** Manager or Manufacturer of Chemists' Specialities; excellent references; experienced; good Counterman; Dispenser and Prescriber; 30; permanency. 15/38, Office of this Paper

**ASSISTANT** or Manager; unqualified; abstainer; married; good Prescriber; disengaged one month from any fixed date; excellent references; Lancashire preferred. P., 40 Cotsworth Street, Manchester.

**QUALIFIED**; Englishman; aged 45; height 5 ft. 10 in.; unmarried; good London and country experience; salary moderate; disengaged September 20; permanency desired. Address, "Chemist," 192 Cowbridge Road, Cardiff.

**PERMANENCY** required by Branch Manager; qualified; married; aged 36; Hull district, or Lincolnshire; excellent references from present employer and others; sale of business sole cause of leaving. "Manager," c/o Brighthouse, Chemist, Suffolk Street, Newland, Hull.

## WHOLESALE.

**AS** Assistant-Warehouseman or Senior Counterman; disengaged. "Ren," 42 Bronsart Road, Fulham.

**WANTED**, a situation as Traveller; 11 years' Retail experience. T (11/31), Office of this Paper.

**TRAVELLER**, with good connection, Midlands and West of England; 10 years' City experience. "Obemist," 77 Fernlea Road, Balham, S.W.

**TRAVELLER**.—Drug or Sundries; town and suburbs preferred. age 26; Retail experience. "Rhei," 30 Wharton Road, Hammsmith, W.

**REPRESENTATIVE** of high-class Proprietary Perfume house desires additional Commission; London twelve miles. J. J. (274/6), Office of this Paper.

**WANTED**, situation as Traveller, or good commissions accepted; excellent character and testimonials. Address, "Oocain" (15/25), Office of this Paper.

**TRAVELLER** (27), wishes to represent good House, town or country; active and obliging; not afraid of work. Address, "Secure," 24 Finboro' Road, S.W.

**TRAVELLER**, connection Northumberland and Durham, requires additional good paying lines. Full particulars to Irvin, Scotswood House, Gosforth, Newcastle.

**TRAVELLER** (disengaged) seeks re-engagement; Drugs, Fry-saluteries, Essences, or allied; Midlands or East Coast preferred. "Jason" (15/24), Office of this Paper.

**YOUNG** man (22), first-class Retail, Dispensing, and Photographic experience, desires situation in Wholesale; excellent references. H. A., Knebworth Road, Stoke Newington London.

**CHEMIST**, Minor qualification, aged about 22, desires engagement in Wholesale Manufacturing Chemist's; preferably within reach of College of Pharmacy. Apply, J. B. Smith, Saling, Baintree.

**TRAVELLER**.—Gentleman, having splendid connection amongst Chemists in South and North of England, Scotland, and Ireland, is open to first-class engagement. Apply, "Ora," (13/13), Office of this Paper.

**YOUNG** Analytical Chemist, F.O.S., knowledge of Chemistry, Pharmacy, three languages, &c., and with 10 years' experience in Wholesale house, desires appointment in Laboratory. A. C. (14/14), Office of this Paper.

**PRACTICAL** Soapmaker and Perfumer, of 30 years' experience in Paris and London, desires a situation; has many hundreds of work-formulae for Soaps, Perfumes, and Toilet Preparations. 14/22, Office of this Paper.

**AGENCY**, or represent good Proprietary amongst doctors, best class Chemists, &c.; Lancashire, Cheshire, Derbyshire, and part Yorkshire; 7 years' excellent connection; reliable, energetic. H. C. H., 13 Sandford Road, Liscard, Cheshire.

**RESPECTABLE** young man required, to attend to an Office and put up Veterinary Specialities; permanent situation; good character indispensable; hours 9 to 6. Apply, first by letter, to Mr. Stevens, St. George's Mansions, Vauxhall Bridge Road.

**REPRESENTATIVE**, experienced, wishes to represent first-class firm, Manufacturing Chemists or Sundriesmen (Wholesale connection), throughout country; Retail, Midlands and Wales; salary and commission. Address, "Goodman" (12/4), Office of this Paper.

**REPRESENTATIVE** Agent, calling on Chemists in Australia and New Zealand on behalf of first-class firm, desires another sole agency; special facilities for depot arrangements in Australia; leaving England end September. Apply, immediately, 16/17, Office of this Paper.

**YOUNG** and experienced Salesman, holding high position in one of the large Provincial Drug Stores, expert Drug valuer, and competent in all branches of the Sundries trades, desires a Traveller's position where industry and perseverance would be suitably acknowledged; open to break new ground with any good speciality. "Scotsman" (15/17), Office of this Paper.

**AS** Local Traveller and Commission Agent.—An experienced qualified Chemist, who has for some time acted as Locum-tenens, &c., and is very well known in the neighbourhood of Liverpool, is open in October to represent one or more first-class houses (Drugs, Sundries, Photographic) in the district; highest references. Reply, in confidence, to "Chemicus," 16 County Road, Liverpool, N.

## MISCELLANEOUS.

**WE** are willing to Advertise in that List of yours provided you quote us a reasonable rate. Daisy Ltd., Mammoth Works, Leeds.

**CHEMISTS' Own Syphons Filled!!!**—Soda-water, Potash, Seltzer, 1s 3d. per doz.; Lemonade, Lithia, 2s. per doz.; free delivery London districts. The e waters are quite unsurpassed for their crisp, sparkling quality and purity. Udrinka (Limited) Factory, 129 Lambeth Road, S.W.

**SODA-WATER TROLLEY**, that makes heavy work light, and on which a boy of 8 can easily convey 3 dozen syphons; will go through any doorway; dozens in use in all parts of the country; money returned if not approved of; carriage paid, 37s. Sole makers, Arthur & Co., Theatre Buildings, Cambridge.

**SULPHUR-TABLETS** and Sulphur and Sarsaparilla Tablets, in 7-lb. hinged and labelled boxes; 2 cwt. 33s. cwt., carriage paid; 1 cwt. 34s., 3 cwt. 18s., 28 lbs. 10s., carriage for ward, prices and show-cards free; Sticky Fly-papers, your own name, 5s. gross, 5-gross lots carriage paid; Disinfecting Shells, 4s. 3d. gross, 5-gross lots £1. Christy & Co. (late White), Obemist, Leicester.

**WINES FOR CHEMISTS**.—Orange, the best, 3s per gall. in jars, 2s. 9d per gall. in small casks; Sherry, 4s. 6d. and 6s. 6d. per gall. in jars, 3d. per gall. less in small casks; Quinine Wine, B.P., in bottles (6 to the gallon), 7s. 9d. per doz., cases free, no labels 7s. 6d. per doz. Send for our Price Lists (Wholesale and Retail), Terms, and Samples. We pay for your Licence. Manufacturers to the Trade of Medicated Wines for 20 years. The Royal Standard Wine Company, Oxford Mansions, New Oxford Street, London, W.O.

**CHEMISTS' Fittings**.—High-class Fittings at Low Prices.—14-ft. Chemist side fitting, fitted 70 mahogany-fronted drawers, bevelled glass labels, cut-glass knobs, lockers, shelves, cornices, &c., complete £15 10s.; mahogany-top serving counter, plate glass front, 10 ft. 6 in. long, £9 5s. bent plate-glass counter-case, 5 ft. long, 80s. Cheap house for window enclosures, alterations, wall-cases, glass facias, and stall plates. Chemists fitted complete. Estimates free. Mills, Shop-fitter, Shop-front Builder, Steam Works, 163-165 Old Street, London, E.O. (late 203 City Road).

**CHEMISTS' Shop-fittings**.—Ranges mahogany drawers, with bevelled-edge glass labels and cut-glass knobs, shelving above, lockers below; mahogany dispensing-screens; counters with glass-case fronts; wall-cases; bent-front and flat-top counter-cases; counter-desks; tota-brust cases, complete shop-rounds, &c.; every requisite for Chemists, new and second-hand; extensive stock to select from, at extremely low prices; practical men sent to all parts; estimates free. Matthews, Chemists' Fitter, 14 and 16 Manchester Street, Liverpool; Works: 9 Preston Street. Tel. phone 6695. Illustrated Catalogue on application.

**SHOPFITTINGS AND SHOWCASES**.—Complete wall drug-fitting, with solid mahogany-fronted drawers, each having bevelled-edge glass label and cut-glass knob, under-part being bottle looking, and above mahogany-edged shelving with pilasters, bevelled-edge plate-glass mirror poison-cupboard surrounded by bold mahogany cornice, £16 10s.; 12-ft. mahogany and plate-glass serving-counter, £10; 14-ft. ditto, £12; 8 ft. ditto, £7; handsome dispensing-screen, counter and sponge case, new design, solid mahogany and plate glass, £16 10s.; bent plate-glass counter-cases, from 2 ft. 6 in. to 8 ft. long; all in stock and ready for immediate despatch. Philip Josephs & Son, 54 and 93 Old Street, London, E.O.

## CUCUMBER AND GLYCERINE.

**ROUSE'S** Cucumber Paste is the best for preparing Cucumber Emulsion. Formulae and labels free with each jar; 1 lb. (for 3 lbs. emulsion), 2s. 3d.; 1 lb., 4s. 3d.; 7 lbs., 25s., post free. Rouse, 61 Charlotte Street, London, W.

N.B.—Cucumbers actually enter into the composition of this article.

## ADVERTISE IN EAST AFRICA.

**MANUFACTURERS** of Proprietary Medicines, Perfumery, Soaps, &c., wishing to increase their business, should advertise in British East Africa by means of handbills and showboards. For further particulars write, Manager, Eastern Advertising Agency, Mombasa, British East Africa. One of the best fields; large demand for patent medicines.

# Exchange Column—Bargains.

$\frac{1}{2}$ d. per word with name and address. 1d. per word if we register the address and attach a number.

No Advertisement inserted for less than 6d.

Remittances payable to EDWARD HALSE, and crossed MARTIN'S BANK, LIMITED.

## FOR DISPOSAL.

### APPARATUS.

Set of metric weights, up to 50 grammes, by Orme; cost 35s.; nearly new. HONGSON, 20 Grandage Terrace, Bradford, Yorks.

Balance, by Becker, in glass case, middle knife edge on agate planes, steel stirrups, apparatus for steadying pans and moving sliding-weight; turns  $\frac{1}{2}$  milligramme; to carry 100 grammes; beam-length 25 centimetres; cost £7 15s., price £4 10s. MYER, 2 New North Road, London, N.

### BOOKS AND PERIODICALS.

What cash offers for *Pharmaceutical Journal*, posted Tuesdays? A. E., 213 High Street, Poole.

What offers? "Family Physician," new, 5 vols.; Cripps's "Pharmacy." FENTON, Harpurhey, Manchester.

Muter's "Pharmaceutical Chemistry"; Maisch's "Materia Medica"; Bower's "Practical Botany"; Loissette's "Memory System." FRANCIS, 30 The Mall, Clifton, Bristol.

### FORMULÆ.

Always reliable; Brooks's Practical Recipes.—Following recommended for autumn and winter requirements: "Glycerine Cream," indispensable toilet requisite; "Blood Cleanser," equals any sold; "Ochilblain Cure," cleanly and safe; "Influenza Mixture," first dose eases; "Linseed and Licorice Balm," rapid cough-cure; "White Oils," creamy, inseparable, stimulating embrocation; "Tic Specific," acts like magic; "Coru Paint," beats all advertised; "Quinine and Iron Tonic" pleasant, bright, and permanent; "Instant Cure for Tooth-ache," rarely fails; "Occasional Pills" for Ladies, safe, honestly recommended; "Harmless Headache Powders," one sells hundreds; "Ringworm Specific," cures worst cases; recipes 1s. 1d. each, 3 for 2s. 6d., post free, full instructions; printed list of 480 recipes free on application. TOM BROOKS, Chemist, Hornsey, London, N.

### PROPRIETARY ARTICLES.

What offers? Holloway's beef-and-coca wines, both sizes. FENTON, Harpurhey, Manchester.

72 Sparklets, 9s. doz.; 12 Sparklet bottles, 3s. 6d. each; 72 Keene's corn-cure, 4s. 6d. doz.; cash; carriage paid London. 16/11, Office of this Paper.

Surplus stock.—For disposal, 6 ls. 1½d., 1 2s. 9d., Parr's; 1 each 2s. 9d., 4s. 6d., Rooke's; 4 ls. 1½d. Rackham's; 6 ls. 1½d. golden herb; 3 1s. 1½d. Kay's restorative; 5 1s. 1½d. Wright's coal tar; 3 2s. 9d. Scott's; 4 2s. 9d. Cobden's pills; 3 2s. 6d. Locock's wafers; 4 1s. 1½d. Marshall's cerate; 6 1s. 1½d. Rooke's ointment; 2 1s. 1½d. Clarke's salve; 3 1s. 1½d. Whelpton's ointment; 3 1s. 1½d. Bragg's charcoal lozenges; 3 1s. 1½d. Johnson's syrup; 4 1s. 1½d. Bateman's drops; 7 1s. 1½d., 1 2s. 9d., 2 2s. 9d. Towle's; 55s. the lot, or offers for part. WYATT, Chemist, Lancaster.

### SHARES.

150 Seigel ordinary, 7s. 6d.; 50 preference, 13s. 9d.; will divide. 176/31, Office of this Paper.

### SHOP FITTINGS.

Handsome wall fitting, 13 ft. 6 in. long, good as new; low price. A. S., 40 Orford Road, Walthamstow.

About a gross stoppered shop-rounds, carboys, Verity lamp, wire blinds, &c., for sale. ORCHARD, Salisbury.

Loff's check-tills with coin-exhibitors, quite new, 37s. 6d. each; illustrated price-list on application. CHAMBERS & SON, Dunstable.

1 gross white kaff bottles, 12 oz., 15 oz., 20 oz.; half gross 12-oz. green ovals, old mortars, &c.; any price to clear. BROOKE, 344 Mare Street, Hackney.

Shopfittings, mahogany; counter, wall-fixtures, showcase, marble-slab dispensing screen, window-fittings, scales, case (bent-glass), tooth-brush case; cheap; printing press with duplicator, new. Particulars, GREENWELL, Chemist, Chester-le Street.

### OPTICAL AND PHOTOGRAPHIC.

35s. pocket spectroscope, new; what offers? FRANCIS, 30 The Mall, Clifton, Bristol.

Cash offers wanted for 9 by 7 Perkin's Optimus wide-angle Euryscope lens, perfect. MORREY, Market Drayton.

### MISCELLANEOUS.

Wire-blinds, lengths 31, 40, 31 inches, or larger size to cut up. EVANS, Chemist, Camberley.

What offers for 32 quarts Pulpur water, 1 doz. France's balsam. KEY, Chemist, Poutypridd.

Two 16s. falcon, 1 33s. bull's eye, 1 42s. bullet, 1 21s. pocket Kodak, perfect condition, simply surplus, 65s. the lot. WYATT, Chemist, Lancaster.

Pair show-jars, as Maw's list, figs. 1 and 20, 22 in., inclusive of cover, perfect condition with stands; what offers? BOWLER, Chemist, Belper.

Stocktaking.—9 gross 2d. Garthwaite's mixed bird-seeds; pocket Kent hops, 1 cwt. Dalmatian insect-powder; 1½ cwt. pearl-ashes; all excellent condition; what offers, or exchange? WATSON, Chemist, Shipley.

Howards' quinine, 1-oz., ½-oz., ¼-oz. bottles; £5 worth Turkey and honeycomb sponges, assorted sizes; £5 worth best silver-mounted salts and perfume-bottles, manucure and perfume cases; 1 doz. Virol; offers; check-till wanted. FREEMAN, Chemist, Balham.

## WANTED.

Camwal shares. State lowest price, 12/7, Office of this Paper.

Chemist's gilded sign-mortar. X. (263/3), Office of this Paper.

Chemist's sign-mortar. Terms, "RAD" (12/19), Office of this Paper.

Camwal ordinary and preference. L. 20 Tressillian Road, Brockley, S.E.

Copy of C. & D. for November 6, 1876. Price to S. M., Office of this Paper.

Camwal ordinary and preference; half-shares bought. 3/37, Office of this Paper.

Old electric lamps and scrap platinum. P. ROWSELL, 9 Derwent Grove, East Dulwich, London.

Kaputene shares wanted. State lowest price and number, FEATHERSTONE, Chemist, Tunstall.

B. P. 1898; Atkinson's "Physics"; Lowson's "Botany"; all most recent dates. REEVE, Chemist, New Street, Birmingham.

Whole-plate camera set in good condition; cash, or exchange quarter-plates, 5 by 4, half-plate sets, or Kodaks. BROWNLOW, Milton Mowbray.

Outside lamp, cheap; or exchange for 2 handsome specie-jars, height 28 in., with square mahogany stands, in good condition. H., 35 Junction Road, N.

Two second-hand swan-necked show-globes, with stands preferred, 3 to 4 gals.; also nice Hahneman's bust. State lowest cash prices, delivered, to WM. BUTTERFIELD, Chemist, Nova Scotia, Blackburn, Lancashire.

Southall's "Materia Med."; Lowson's "Botany"; Newth's "Inorganic Chemistry"; Perkin's "Organic Chemistry"; Ince's "Latin Grammar"; Muter's "Analytical Chemistry." Apply, "OBEMUS," 17 Independent Street, Nottingham.

All or either of the following numbers of the first (quarterly) series of the *Journal of the Chemical Society*, issued between 1849 and 1862: Vol. v., parts 3 and 4; vol. vi., parts 1, 2, 3, 4 (the whole); vol. vii., parts 1, 2, 3, 4 (the whole); vol. viii., part 2; vol. x., parts 2 and 4; vol. xiv., parts 3 and 4; apply as below, stating price. Or either of the following is offered in exchange for either of the foregoing:—Vol. xii., part 4; vol. xiii., parts 3 and 4; vol. xv., parts 3, 4, 5, 6, 8, 9, 10, 11, 12; series 2, vol. xi., the part for December, 1873. DR. ATTFIELD, Watford, Herts.

### PERSONAL.

Name and address of firm who supplied the late C. Ycrath, Swansea, with digestive food for infants. 167/30, Office of this Paper.

# A. S. LLOYD'S EUXESIS.

For Shaving without Soap, Water, or Brush.

## CAUTION.

The Labels on genuine EUXESIS bear signature of A. S. LLOYD in BLACK INK, and that of his Widow, AIMÉE LLOYD, in RED INK. Refuse any other.

Sole Manufacturers and } **AIMÉE LLOYD & CO.**  
Proprietors:

3 SPUR STREET, Leicester Square, LONDON, W.C.

N.B.—When ordering from Wholesale Houses write LLOYD'S EUXESIS (WIDOW'S).



## “ADORA”

THE NEW SHAVING SOAP.

The “Chemist and Druggist” says:—“It makes an excellent shave, the lather being rich and creamy and healing to the skin.”

**DOES NOT DRY ON THE FACE.**

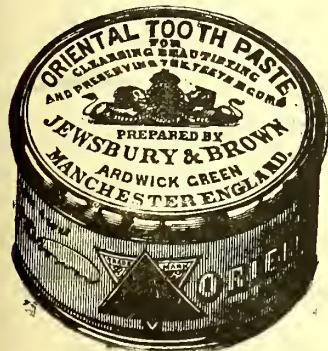
IN XYLONITE CASES, 1s. 6d. REFILLS, 1s.

SAMPLE ON RECEIPT OF BUSINESS CARD.

**AGENTS WANTED AT HOME AND ABROAD. LIBERAL TERMS.**

**M. E. FOSTER, 50 Bishopsgate Within, LONDON.**

Proprietor of Foster's American Bay Rum and “ADORA” Preparations



## JEWSBURY & BROWN'S Oriental Tooth Paste.

Established over 70 years. Warranted to retain its properties and keep good in any climate. The original and only genuine is manufactured solely by

**JEWSBURY & BROWN,**  
ARDWICK GREEN, MANCHESTER.

Particular attention should be paid to the Trade Mark, printed in red and green, facsimile of which is annexed, as numerous imitations are offered.

MAY BE OBTAINED FROM THE WHOLESALE HOUSES.

Bills and Showcards forwarded on receipt of Address Cards and directions for enclosure.

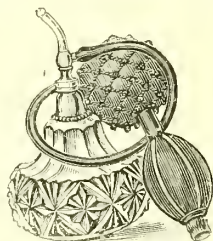
# "ST. PAUL'S" NATURAL PERFUMES.

**Chemists who habitually buy the "St. Paul's" Perfumes** are invited to look through their Stock and replenish, if necessary, in good time for the coming Season. Orders sent early will ensure prompt delivery.

**Chemists who have not yet ordered "St. Paul's" Perfumes,** and who may not be quite content with those they at present buy, are invited to make up even a small Trial Order for our

2d. Perfumes ... 2 doz. on Card for 2/6. | 3d. Perfumes ... 1 doz. on Card for 2/-  
6d. Perfumes ... 1 doz. in Box for 3/9. (Cannons, Ovals, Squares, &c.)  
1/- Perfumes ... 1 doz. in Box for 3/9.

OUR  
1900 ILLUSTRATED PRICE LIST  
will give some idea of the numerous styles of Bottles sold, and we shall be pleased to post a copy on receipt of Trade Card.



SPRAY PRODUCERS,  
SMELLING SALT BOTTLES,  
FANCY CASES FOR 'XMAS,  
are contained in this list.

**F. NEWBERY & SONS, 27 & 28 CHARTERHOUSE SQ., E.C.**  
Samples in SHOWROOM on GROUND FLOOR.

**BOORD & SON,**  
DISTILLERS, FOREIGN WINE & SPIRIT MERCHANTS, AND METHYLATORS,  
ALLHALLOWS' LANE AND BARTHOLOMEW CLOSE, LONDON, E.C.  
Quotations for S.V.R., Methylated Spirit and Finish on application.  
FINEST ORANGE WINE FOR QUININE.

**JAMES BURROUGH** **S.V.R.**  
(LIMITED), [1] 58 o.p. 60 o.p.  
59 p.o.

**CALE ST., CHELSEA, S.W.**  
**and Methylated Spirit**  
AT LOWEST PRICES.  
Write for Quotations.

**S.V. METH.**

**JONES & COMPANY,**  
COPPERFIELD ROAD  
LONDON, E.  
LARGEST MAKERS IN THE KINGDOM.

We are prepared to supply METHYLATED SPIRIT in  
5-gallon quantities at Lowest Prices.

**REDUCTIONS TO LARGE BUYERS.**  
SAMPLES FREE.

THE ONLY GENUINE  
**JAVA POWDER**  
(BOURJOIS, PARIS.)

\* \*  
Note Facsimile of Box.

ALL OTHERS ARE  
IMITATIONS.

Price 6/9 per Doz

OUR  
ROUGES  
EYEBROW PENCILS  
LIP SALVES  
PERFUMES



Find a Ready Sale, and should be  
Stocked by all leading Chemists.

\* \*  
Note Facsimile of Box.

ALL OTHERS ARE  
IMITATIONS.

Price 6/9 per Doz.

OUR  
POMADE HONGROISE  
CREASE PAINTS  
BRILLIANTINES  
TOILET WATERS

May be had from all London and Provincial Wholesale Houses. Write for Price List.

London Depot—HENRY C. QUELCH, 4 Ludgate Sq., LONDON.

Oil of Lemon.

„ Bergamot.

„ Sweet Orange.

G. AREZZO, of Messina, begs to  
announce that he has appointed Mr. H. C.  
QUELCH, of 4 Ludgate Square,  
London, E.C., as his Sole Agent for the  
United Kingdom. Samples and Prices  
will be forwarded on application

Stocks kept in London. Trial Order Solicited.

“No. 54 ALTERMARKT”  
(ORIGINAL HAUS)

**EAU DE COLOGNE**

SUPERIOR TO ANY OTHER BRAND.

Of all Wholesale Houses, and the Sole Agents for United  
Kingdom and the Colonies—

**VAN OPPEN & CO.**  
HACKNEY, LONDON, N.E.

**OKELL'S ORIGINAL  
MONA BOUQUET**

(First introduced by the late JOSEPH OKELL).

Registered Trade Mark, “DOUGLAS PIER.”

The most popular and best-selling perfume in the market.  
Retail Prices, 1/-, 1/9, 3/6, 6/-, 7/6, 10/6 per Bottle.

**ALSO 3d. SAMPLE BOTTLES.**

Shippers and Wholesale Buyers supplied on the best terms by  
THOMAS WEST, 1185 & 1187 CHESTER ROAD, MANCHESTER  
STRETFORD,

# SPOTS ON THE SUN

ARE INEVITABLE, WE CANNOT ALTER IT—  
BUT SPOTS ON THE HUMAN FACE CAN  
EASILY BE ERADICATED BY THE  
USE OF

## DR. MACKENZIE'S ARSENICAL TOILET

The Constant use of this Soap renders the Skin  
Soft & Smooth, Removing Pimples, Blotches & all  
Blemishes, As a Skin beautifier it is unequalled.  
1/- a Tablet, Box of 3 for 2/6, Unscented 6d.

# SOAP

For a Lovely  
Complexion

USED BY  
LADIES  
OF DISTINCTION

Producing  
a most  
Beautiful  
Complexion

THE ORIGINAL & ONLY GENUINE. ESTABLISHED NEARLY A CENTURY

AS SUPPLIED TO  
THE ROYAL HOUSEHOLDS

# JOHN BOND'S

REGISTERED TRADE MARK.



CRYSTAL PALACE

# MARKING INK

GOLD MEDAL

AWARDED 45 GOLD MEDALS & DIPLOMAS  
FOR SUPERIOR EXCELLENCE

HIGHEST AWARDS AND LARGEST SALE.

### John Bond's 'CRYSTAL PALACE' Marking Ink.

	Wholesale Prices, Net.	Per gross
6d. John Bond's "Crystal Palace" Marking Ink, with Vouchers enclosed, entitling the purchasers to their Rubber Stamp.	..	30/-
1/- .. also with Free Linen Stretchers	..	60/-
6d. John Bond's "Crystal Palace" Marking Ink Pedestal, with Ink and Linen Stretcher, with Voucher as above	..	36/-
1/- .. with Pen and Linen Stretcher	..	72/-
1/- Bijou Cabinet, 1/- Bottle of Ink, Improved Linen Holder and Pen, in Handsome Box	..	72/-
1/6 John Bond's "Crystal Palace" Marking Ink Cabinet, with Linen Stretcher and Pen, in Handsome Box, Voucher enclosed	..	90/-
1/- John Bond & Co.'s Nota Bene Marking Ink (requires no heating)	..	50/-
6d. ..	..	25/-
6d. John Bond & Co.'s Marking Ink	..	24/-
1/- ..	..	48/-

In Stoppered Bottles, 10/- per gross extra.  
Minimum order at Wholesale Prices,  $\frac{1}{2}$  gross 6d.; or assorted order to the value of £1.

Terms: Net Cash Monthly Account.

**GIVEN AWAY,** and enclosed with every 6d. and 1/- bottle, a voucher entitling purchasers to their name or monogram Rubber Stamp. Also free with enlarged 1/- size, an improved Linen Stretcher.

*Cheapest, Best, & Most Saleable Article in the World.*  
Established nearly a century, and its ever-increasing sale shows the appreciation of the Trade and Public for the Original and Only Genuine preparation, which is more to the front than ever.

#### IMPORTANT NOTICE TO THE TRADE.

I take the opportunity of thanking the Trade for their increased support, and thank them for returning to the Wholesale Houses imitations of my world renowned preparation, often substituted for extra profit. When ordering please state clearly, "John Bond's 'CRYSTAL PALACE' Ink" required.

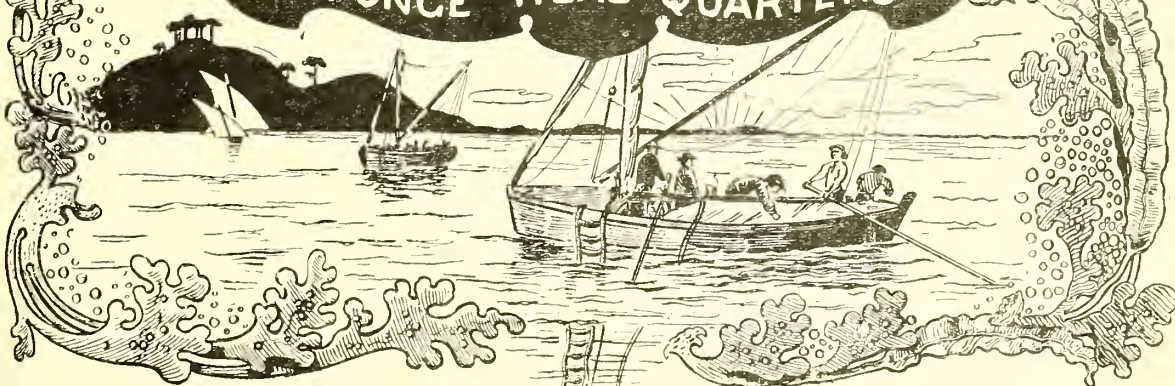
Wholesale Export Depot and Manufactory—

**75 SOUTHGATE ROAD, LONDON, N.**

Telephone—142, Dalston. Telegrams—"ACTINIC LONDON."

# CRESSWELL

## SPONGE HEAD-QUARTERS



1 & 2 and 18 & 19  
RED LION SQUARE, LONDON.

**CRESSWELL BROS. & SCHMITZ**

IS THE ONLY FIRM WITH ITS  
OWN ESTABLISHMENT ON  
THE FISHERIES.

### DIRECT IMPORTERS

in the true sense of the term,  
C. B. & S. offer to buyers  
the exceptional advantage of  
selections from a stock un-  
equalled in extent and variety  
at prices which easily win for  
the firm the preference of  
their orders.

Write for New

**ILLUSTRATED PRICE LIST**  
JUST OUT.

And at  
PARIS, and AEGINA, GREECE.

**CRESSWELL BROS. & SCHMITZ**

HOLD THE LARGEST STOCK  
IN THE WORLD.

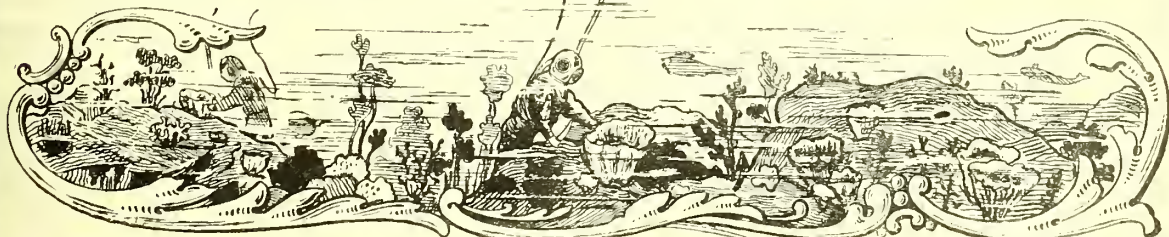
FINEST AND MOST VARIED ASSORTMENTS.

The largest direct shipment  
ever received by a British firm  
was consigned to C. B. & S. this  
year from their own house at  
Ægina, Greece.

(See "London Customs Bill of Entry,"  
January 30, 1900.)

Cresswell's Patent Sponge Figures  
ON LOAN FOR WINDOW DISPLAYS.

WRITE FOR CONDITIONS.



**CRESSWELLS for ROCK-BOTTOM PRICES.**

# A FEW OF SHIRLEYS' SPLENDID "SELLERS."



## PATRIOTIC SOOTHERS.

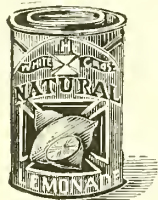
Every soother has a **Union Jack** attached to it.

- 1*d.* Line ... 8/- gross.  
2*d.* " ... 15/- "  
2*d.* Line, 16/- gross, with photos of Generals attached to the cord as a button.  
3*d.* Line, with Silk Flag, 1 doz. very elaborate card, representing various regiments, 2/- doz.

## FLORAL DAINTIES.

The "Cachou" par excellence. Highly concentrated, small, dainty. Put up in tubes, 3 doz. on a card and 18 on a card, 8/- gross.

Also in silver slide boxes, blocked, 3 tubes in a box, 2/9 doz. boxes, Violet, Heliotrope, Rose, Lavender, Wallflower, and Lily, for high-class trade.



## WHITECROSS LEMONADE.

"Just like Home-made."

- 1*d.* packets ... 8/- gross.  
1/4-lb. Lever tins, decorated ... 2/6 doz.  
1/2-lb. " " ... 4/- "  
1-lb. " " ... 7/- "

Elaborate tins, in several colours.

## INSECT POWDER.

3*d.* Line, filled, 1/10; 6*d.*, 3/6.

In smartly decorated tins, with inner dredgers.

X 18 Tins, empty, 6/6; X 18L, large, 10/- gross.



**FLY PAPERS.**—5/- gross; also smaller at 4/-, and Monster at 7/-. Write us, please. Special prices for quantity.

**TIN BOXES.**—Decorated and Plain, for variety of goods such as Health Saline, Citrate of Magnesia, Bland's Pills, Vaseline, Compound Liquorice Powder, Horse Powder, Carbolic Powder, &c., &c. Special designs produced. Our noted X Series is now known to all as the finest range in the market.

**SHIRLEY BROTHERS, Whitecross Works, Rockingham Street, Newington Causeway, S E.**

**BUY YOUR SPONGES FROM THE DIRECT IMPORTERS.**

# SPONGES SPONGES

Of Every Description always on hand.

# I. & M. COHEN,

**SPONGE MERCHANTS, IMPORTERS, & EXPORTERS,**

Contractors to the War Office and Admiralty, Railways, Steamship Companies, &c.,

**53 & 54 HOUNDSDITCH, & 66 ST. MARY AXE, LONDON, E.O.**

Telegraphic Address: "DAQUEZ LONDON."

## SUPPORT HOME INDUSTRIES.



A.D. 1777.

**BUY  
KENT'S  
BRUSHES.**

See pp. 215, 216, 217, 218 Summer Issue, 1899;  
also Diary, 1900, pp. 31, 32, 33, 34.

## WHAT IS HEDAKENE?



Just what the Public are asking for, and an exceptional demand is being created.

**HEDAKENE** gives certain and almost instantaneous relief for **Headache, Neuralgia, and Toothache.** Best and safest remedy in the market.

Liberal Terms and Special facilities offered to all Chemists who stock HEDAKENE.

Write at once to Wholesale Agents, or direct to  
**HEDAKENE, LTD., STATION ST., BIRMINGHAM.**

# VIROL

## The New Nutrient.

VIROL is a combination of Bone Marrow (Red and Yellow), highly diastasic Malt Extract, New-laid Eggs (with the lime representing the shells), and Lemon Syrup prepared from the fresh fruit.

A striking feature of VIROL is the use of the *Red Bone Marrow*, which is not a fat, but consists largely of iron-bearing proteids extracted from finely comminuted ox rib and calf bones, with glycerine. VIROL is therefore

### A VALUABLE HÆMATINIC AS WELL AS A FAT FOOD.

The flavour of VIROL is delicious. It possesses surpassing advantages over cod-liver oil and other preparations generally prescribed for Invalids and Children.

VIROL is being largely prescribed and recommended by the Medical Profession all over the Country, and

## IS USED IN ALL THE LONDON CHILDREN'S HOSPITALS.

It is an article which finds a ready sale and is

## A Paying Line for Chemists.

***Retailed in Jars at 1/-, 1/8, 3/-, 4/6.***

The 1/8 size is in great demand.

**Virol is on the P.A.T.A. List.**

Manufactured at the splendidly-appointed Laboratories of

# BOVRIL LIMITED

Under the superintendence of their experienced Staff of Chemists.

**VIROL LTD., 152 OLD ST., LONDON, E.C.**

# PLASMON

Registered Trade Mark.

Patented in the U.K. and Abroad.

**PLASMON** is an absolutely pure, soluble milk albumen, free from all chemicals, and being tasteless and odourless is capable of being used in any and every form of food. It replaces all other nitrogenous substances in the dietary of the healthy, the weak, the aged, and the young, and is used in many of the principal Hospitals. It is prescribed and strongly recommended by eminent physicians throughout the country. See *Lancet*, August 11, 1900, p. 404.

*Descriptive literature will be forwarded on application.*

PRICES {	Packets, each about	1 lb., 2/6.	Plasmon Biscuits, Plain or Sweet.	Retail Trade Dis-
	"	"	tins about 1 lb., 1/6,	court 15 per cent.
	"	$\frac{1}{2}$ lb., 1/4.	" " 2 lbs, 3/-.	on orders of £1 and
	"	$\frac{1}{4}$ lb., 9d.	Plasmon Chocolate, at 3/- per lb.	upwards, car. paid.

THE PLASMON SYNDICATE, LIM., 56 Duke St., Grosvenor Square, LONDON, W.

## "SOLAZZI" LIQUORICE JUICE

### THE CHEMISTS' BRAND.

Sold by all Chemists and Druggists in United Kingdom and British Colonies.

#### THE TESTIMONY OF "THE LANCET."

"The above brand has long been known to be of standard purity. We found the specimen to be completely soluble in water and entirely free from impurities of any kind. It is, therefore, well adapted for the pharmaceutical purpose for which it is useful, while as a popular demulcent it is both safe and reliable."

Recommended also by "*The British Medical Journal*," "*Health*," "*The Chemist and Druggist*," "*Food and Sanitation*."

ASK FOR SHOWCARDS AND HANDBILLS.

TO BE OBTAINED OF ALL WHOLESALE HOUSES.

From a . . .

## BUSINESS POINT OF VIEW!

The Tradesman's true "POLICY" is to encourage and facilitate the sale of the article which offers the

**GREATEST VALUE for MONEY.**

The Public is appreciating the fact that

## HILLABY'S

LIQUORICE WAFERS,  
PONTEFRAC TCAKES,  
LIQUORICE PELLETS, and  
LIQUORICE & CHLORODYNE LOZENGES

ARE . . . . .

## "FIRST"

for PURITY !  
for STRENGTH ! !  
for FLAVOUR ! ! !

A USEFUL & DELICIOUS SWEETMEAT.

**FREE SAMPLE on application.**

HILLABY'S, LTD., Lion Works, PONTEFRAC T.

THE MOST ECONOMIC, CONVENIENT, & PORTABLE FORM OF SOUP.

# LAZENBY'S SOUP SQUARES

THESE SQUARES ARE PREPARED IN 13 VARIETIES (MULLIGATAWNY, JULIENNE, GRAVY, &c.) AND SHOULD FIND A PLACE IN EVERY STORE-ROOM, BEING INVALUABLE FOR MAKING SOUP AT SHORT NOTICE OR IMPROVING STOCK. THEY WILL KEEP GOOD ANY REASONABLE LENGTH OF TIME AND ARE PACKED IN NEAT BOXES CONTAINING 6 & 12 SQUARES.

**ONE 6<sup>p</sup> SQUARE  
WILL MAKE A PINT & A HALF  
OF STRONG NUTRITIOUS SOUP**

SOLD BY ALL THE LEADING GROCERS AND STORES.

Should any difficulty be experienced in obtaining the Squares, please communicate at once with the Manufacturers,

**E. LAZENBY & SON, LTD., 18 Trinity St., LONDON. S.E.**

# RIDGE'S PATENT COOKED FOOD

SATISFYING.  
STRENGTHENING.  
SOOTHING FOR INFANTS.  
AGREEABLE.  
DIGESTIBLE.  
NOURISHING.

**DR. RIDGE'S**  
PATENT COOKED FOOD  
Is certified to contain all the  
essentials of a Pure Dietary  
necessary to secure a healthy  
and natural development of  
bone and muscle, a vital  
necessity to growing infants  
and a comfort to all.

**DR. RIDGE'S FOOD** is the  
Oldest, Best, Most Widely-  
known, and has the  
LARGEST SALE in the  
World.

SOLD  
EVERYWHERE.

The public are  
cautioned against  
all imitations.



"Makes them strong to push along."

**RIDGE'S FOOD MILLS, LONDON, N.**

## LEMON SQUASH AND LIME JUICE CORDIAL (Filtered Bright).

	LEMON SQUASH.	LIME JUICE CORDIAL.
Reputed Pint Square White Glass Stoppered Bots.	3/9	4/- per doz.
Do. Quart " " " "	6/-	6/6 "
Do. " " Green Glass " " "	6/-	5/9 "
Do. Pint Round Bots. " " "	3/6	3/9 "
Do. Quart " " " "	5/6	5/9 "

Less than 6 dozen Quarts in one delivery .. .. 6d. per doz. extra.  
Less than 12 dozen Pints " " .. .. 3d. " "

IN BULK 1/9 PER GALLON. Delivery free in London.

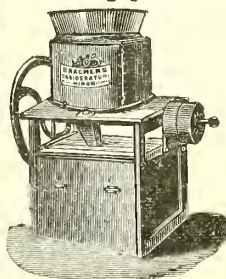
SAMPLES ON APPLICATION.

**CHAS. SOUTHWELL & CO.**

Wholesale Confectioners, DOCKHEAD, S.E.

## SIFTER & MIXER (BRACHER'S PATENT) THE DESIDERATUM.

For mixing powders of any description there is nothing  
to equal it for speed and thorough-  
ness. About 12,000 are in constant  
use throughout the World, from  
7 lb. capacity



Price 27/6

up to 1 cwt. size for hand and  
power as per Illustration.

Sole Maker and Owner of  
the above,

**WILLIAM NEWMAN, WINCANTON.**



# DR TIBBLES' Cocoa

"Undoubted Purity and Strength."—*Medical Magazine.*

"In the front rank of really Valuable Foods."—*Lancet.*

# PERFECTLY PURE BUT NOT INSIPID

FAVoured BY THE HOMES AND HOSPITALS OF GREAT BRITAIN.

**An assured Profit of over 30 per cent.**

may be realised by chemists on the sale of

## INVALID BOVRIL,

a special form of Bovril without seasoning, and more highly concentrated than the ordinary variety. The above-named percentage is the average profit on the three sizes : 2, 4 and 8 oz. jars.

As INVALID BOVRIL is now warmly recommended by most medical men, and the public demand in consequence steadily increasing, chemists who keep well stocked should find Invalid Bovril a highly appreciable source of profit.

**BOVRIL LIMITED, Food Specialists and Hospital Purveyors, LONDON.**

MESSRS. BOVRIL LIMITED have been awarded **2 GOLD MEDALS** at the **PARIS EXHIBITION**—one for their General Products and one for their Emergency Rations.



# van Houten's Cocoa

Report by OTTO HEHNER, Esq., F.I.C., F.C.S.—"Pure and genuine.—Method of manufacture in every way superior.—Great strength and digestibility."

THE

# ARMOUR LABORATORY

Enjoys advantages that are necessary to the perfect development of all articles used in Organo-Therapy, namely:—  
Unlimited quantities of raw material, permitting careful selection of what is used; proximity to killing establishment, ensuring the delivery of stock while perfectly fresh; improved appliances of all kinds; skilful men in charge, and a chemist independent of the manufacturing departments who tests samples of each lot of all preparations.

PEPSIN. B.P. and U.S.P. Grades.

PANCREATIN. U.S.P.

THYROID. Powder and Tablets.

AND ANIMAL PRODUCTS.

ARMOUR & COMPANY, Chicago & London,

WERE AWARDED

## A GOLD MEDAL

AT THE PARIS EXHIBITION, 1900,

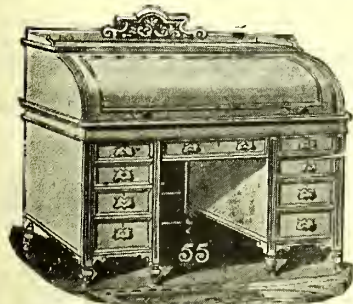
FOR THEIR DISPLAY OF THESE PRODUCTS.

# C. ALSTROM

## SHOP & OFFICE

## FITTER,

## Glass Show Case Manufacturer.



**Factory—**

76 Gt. Eastern St.,  
LONDON, E.C.

A Large Stock of  
OFFICE  
FURNITURE  
and SHOW CASES  
always on hand.

***Catalogue and Estimates Free.***

ESTABLISHED 1874.

Telephone—  
No. 710, London Wall.

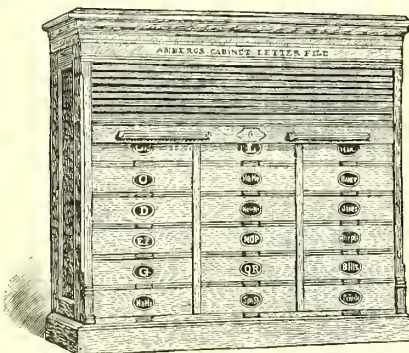
Telegraphic Address—  
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## CABINET LETTER FILES.

### THE BEST IN THE WORLD.

Our latest patents embody the  
**MOST PERFECT**  
methods of letter filing known.



PAPERS KEPT  
FREE  
FROM DUST.

No Fixing on  
Wires or Spikes

Instantaneous  
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to papers of  
any date.

INSPECTION  
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Illustrated Catalogue, No. 13, free on application to the  
Sole Manufacturers—

## AMBERG FILE & INDEX CO.,

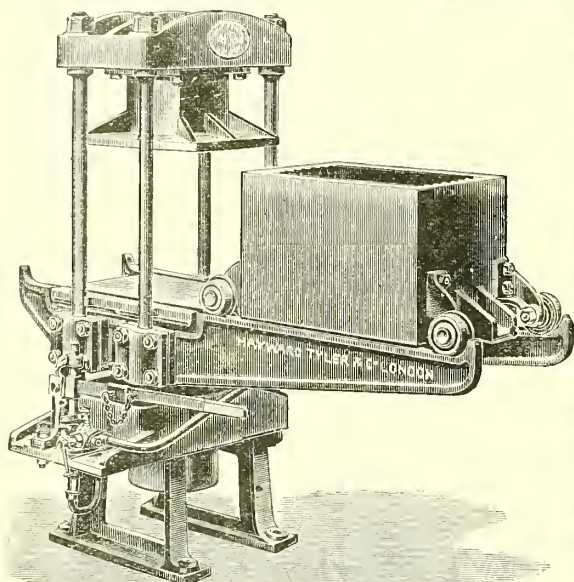
27 Little Britain, LONDON, E.C.

Also NEW YORK and CHICAGO.

# HAYWARD-TYLER & CO.

MAKERS OF

## HYDRAULIC PRESSES.



Tincture Press and Pump.

3

90 &amp; 92 WHITECROSS STREET, E.C.

# THE BEST ANTISEPTIC

For Both Internal and External Use.

## LISTERINE

LISTERINE, a well-proven antiseptic agent—an antizymotic—is especially useful in the management of catarrhal conditions of the mucous membranes, and to make and maintain surgically clean—aseptic—all parts of the human body, whether by spray, irrigation, atomization, or simple local application. It is therefore characterised by its particular adaptability to the field of

### PREVENTIVE MEDICINE.

### INDIVIDUAL PROPHYLAXIS.

The absolute safety of LISTERINE gives it unquestionable superiority over all other antiseptics for internal administration in Digestive disorders, Diarrhoea, Dysentery, and Cholera; in Typhoid Fevers, and as a Spray for the Throat in Diphtheria, Scarlet Fever, and Pertussis.

Listerine is the best preservative of the Teeth yet found.

LISTERINE is manufactured only by the Lambert Pharmacal Co., in their Laboratories at St. Louis, Paris, and Toronto.

### BRITISH AND COLONIAL TRADE SUPPLIED BY

S. MAW, SON & THOMPSON, 7 to 12 Aldersgate St., London, E.C., our General Agents for Great Britain and the British Colonies, excepting Canada.

W. LLOYD WOOD, Church and Gerrard Streets, Toronto, our General Agent for Canada.

FOR DESCRIPTIVE LITERATURE, ADDRESS—

**LAMBERT PHARMACAL COMPANY,**  
ST. LOUIS, MO., U. S. A.

# LOFTHOUSE & SALTMER,

MANUFACTURING CHEMISTS, WHOLESALE & EXPORT DRUG MERCHANTS, HULL.

We invite the Trade to apply for the Agency for

## LOSALL'S

CHALYBEATE SULPHUR

## SALT.

(Registered)



Put up in enamelled Tins, yellow ground and black lettering.

Leaves a clear Net Profit of over 70% on Lowest Net Trade Prices, 3/6 and 7/- dozen in Tins, and 10/6 dozen in Bottles, and is easier to sell and more satisfactory to push than ordinary Health Salts, because of its superior Medicinal Properties.

LONDON AGENTS—F. NEWBERRY & SONS.

## An Unique and Capital Selling Line.

A sure preventive of BILIOUSNESS, RHEUMATISM, ECZEMA, and all Blood and Skin Diseases.

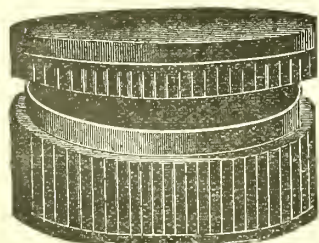
Retailed at face value, 6d. and 1/- Tins, and in Family Bottles 1/6 each.

On the P.A.T.A. List, each Agent also personally undertaking not to retail below face value.

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Neat Enamelled Metal Show Caris and also Large Posters supplied gratis.

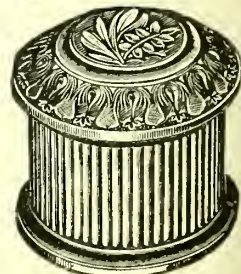
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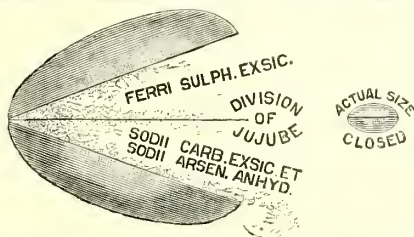


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	Price per dozen 1 gross bottles.		Price per doz n 1 gross bottles.
Ferrous Carbonate .. .. .	30/-	Hypophosphites Co. and Creosote .. .. .	54/-
<i>Pil. Blaud ½ or 1.</i>		<i>Creosote m. ½, and Hypophosphites of Iron, Quinine, Soda, Lime, Potash, Manganese, and Strychnine, equiv. to Syr. Hypophosph. Co. dr. ½.</i>	
Ferrous Carbonate .. .. .	42/-	Hypophosphites Co. and Guaiacol, <i>min. ½</i> .. .. .	66/-
<i>Pil. Blaud 2.</i>		<i>Equiv. to dr. ½ of the Compound Syrup of Hypophosphites.</i>	
Ferrous Carbonate and Arsenate .. .. .	42/-	Ferrous Carbonate and Arsenate with Nux Vomica .. .. .	42/-
<i>Pil. Blaud 1, Sodii Arsenatis Anhyd. gr. ⅓.</i>		<i>Pil. Blaud 1, Sodii Arsen. Anhyd. gr. ⅓, Ext. Nucis Vom. gr. ¼.</i>	
Ferrous Carbonate, Arsenic, and Strychnine .. .. .	42/-	Ferrous Carbonate, with Ext. Cascara Sagrada .. .. .	42/-
<i>Blaud's Pill 1, Arsenious Ac. gr. ⅓, Strychnine gr. ⅓.</i>		<i>Pil. Blaud 1, Ext. Casc. Sagr. gr. ¼.</i>	
Ferrous Carbonate, Arsenic, and Strychnine .. .. .	42/-	Ferrous Carbonate with Aloes .. .. .	42/-
<i>Blaud's Pill 1, Arsenious Ac. gr. ⅓, Strychnine gr. ⅓.</i>		<i>Pil. Blaud 1, P. Aloes Barb. gr. ½.</i>	
Ferrous Carbonate with Arsenate and Aloes .. .. .	42/-	Ferrous Carbonate with Aloes and Nux Vomica .. .. .	42/-
<i>Pil. Blaud 1, Sodii Arsen. Anhyd. gr. ⅓, Pule. Aloes Barb. gr. ½.</i>		<i>Pil. Blaud 1, Pule. Aloes Barb. gr. ½, Ext. Nucis Vom. gr. ¼.</i>	
Ferrous Carbonate with Aloin .. .. .	42/-	Ferrous Carbonate, Zinc Valerianate, and Cascara .. .. .	42/-
<i>Pil. Blaud 1, c. Aloin gr. ⅓.</i>		<i>Pil. Blaud 1, Zinc Valer. gr. 1, Ext. Casc. Sagr. gr. ¼.</i>	
Ferrous Carbonate with Aloes and Quinine .. .. .	42/-	Ferrous Carbonate, Zinc Valerianate, and Nux Vomica .. .. .	42/-
<i>Pil. Blaud 1, Quin. Sulph. gr. ½, Aloes Barb. gr. ¼.</i>		<i>Pil. Blaud 1, Zinc Valer. gr. 1, Ext. Nuc. Vom. gr. ½.</i>	
Ferrous Carbonate with Nux Vomica .. .. .	42/-	Ferrous Carbonate, Zinc Valerianate, and Quinine .. .. .	42/-
<i>Pil. Blaud 1, Ext. Nucis Vom. gr. ¼.</i>		<i>Pil. Blaud 1, Zinc Valer. gr. 1, Quin. Sulph. gr. ½.</i>	
Ferrous Carbonate with Nux Vomica and Quinine .. .. .	42/-	Ferrous Carbonate with Ext. Cascara Sagrada and Nux Vomica .. .. .	42/-
<i>Pil. Blaud 1, Ext. Nucis Vom. gr. ¼, Quin. Sulph. gr. ½.</i>		<i>Pil. Blaud 1, Ext. Casc. Sagr. gr. ¼, Ext. Nucis Vom. gr. ¼.</i>	
Ferrous Phosphate with Nux Vomica .. .. .	42/-	Ferrous Carbonate with Strychnine .. .. .	42/-
<i>Ferri Sulph. Exsicc. gr. ⅓, Sodii Phosph. Exsicc. gr. ⅓, Sodii Carb. Exsicc. gr. ⅓, Ext. Nucis Vom. gr. ¼, Quin. Sulph.</i>		<i>Pil. Blaud 1, Strychnin. gr. ⅓.</i>	
Hypophosphites Co. .. .. .	42/-	Ferrous Carbonate, and Red Bone Marrow .. .. .	54/-
<i>Each Bipalatinoid is equivalent to one teaspoonful of Syr. Hypophosph. Co. and contains the Hypophosphites of Iron, Quinine, Lime, Soda, Potash, Manganese and Strychnine.</i>		<i>Pil. Blaud 1, Red Marrow gr. 2½.</i>	
		Creosote <i>min. 1</i> ; Soda Mint ( <i>i.e.</i> Sodii Bic. gr. 2, P. Zingib. gr. ½, Menthol gr. ½) .. .. .	42/-
		Creosote <i>min. 1</i> ; Ferrous Carbonate, equivalent to 1 Blaud's Pill. .. .. .	54/-
		Creosote <i>min. 1</i> and Easton's Syrup, <i>equiv. dr. ½.</i> .. .. .	54/-

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gr. 5, in tubes of 25, 4/- per dozen      gr. 20, in tubes of 12, 4/6 per dozen;  
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(Formerly known as Iodic-Hydrarg.)

Largely in demand by the medical profession, as it offers the most convenient means of utilizing the powerful anti-septic properties of mercuric iodide in solution.

gr. 1, in bottles of 25 and 100, 6/- and 14/- per dozen.  
gr. 8.75      "      "      18/-      60/-      "

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**Cocaine Hydrochlor., gr. 1/2, gr. 1, and gr. 5.**

Preferred by surgeons to solutions which deteriorate in anæsthetic action on keeping.

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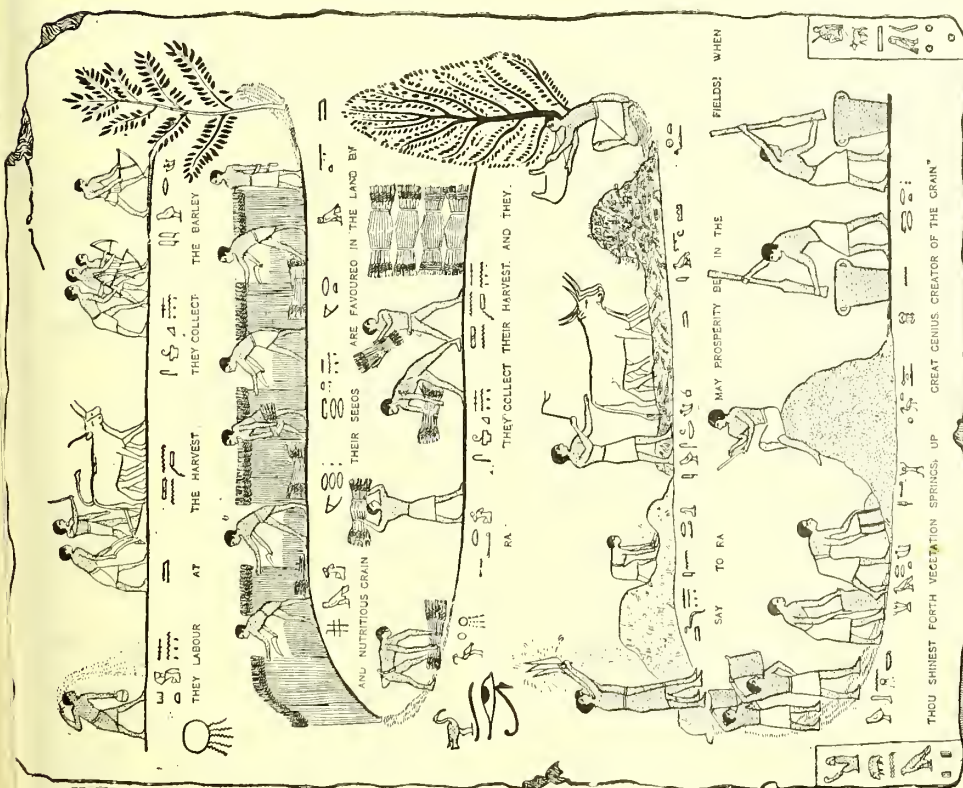
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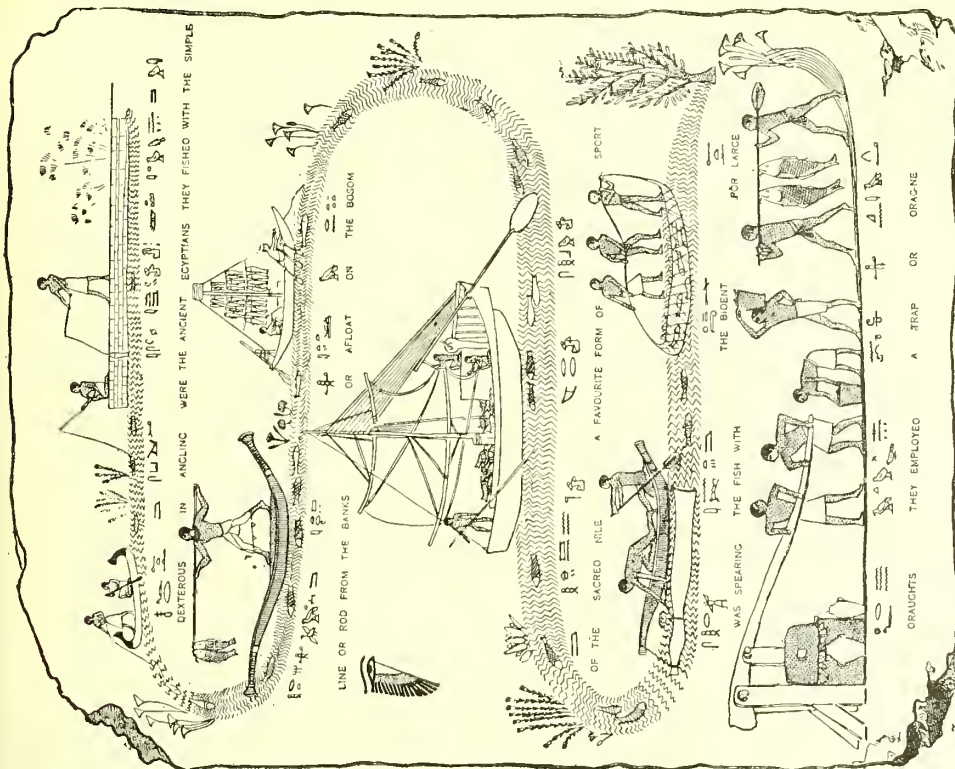
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Yellow	5/- „	11/8 „	21/6 „	28/- „	24/6 „
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White	7/- per tin	15/- per tin	27/6 per tin	58/- per cwt.	52/6 per cwt.
Yellow	3/3 „	7/3 „	13/4 „	24/6 „	21/6 „
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**CONTENTS: Vol. LVII. No. 10 (Series No. 1,076).**

PAGE	PAGE
Bankruptcies and Failures..... 441	Educational Information:—
Business Changes..... 443	Science..... 434
Canadian Pharmacy..... 445	Prizes and Positions..... 437
Chemists' Books..... 446	Optical..... 438
College Notes..... 438	English News..... 400
Colonial and Foreign	French News..... 444
News..... 405	Gazette..... 442
Correspondence..... 447	Irish News..... 402
Deaths..... 406	Legal Reports..... 440
Deeds of Arrangement..... 442	Marriages..... 406
Dewsbury Chemists' Association..... 407	New Books..... 407
Druggists' Sundries..... 446	New Companies and Company News..... 442
Editorial Comments:—	New German Pharmacopoeia..... 439
Pharmaceutical Curriculum..... 410	Observations and Reflections..... 409
Division of the Minor..... 411	Personalities..... 438
The Cell..... 412	Pharmaceutical Aviary..... 408
The Carbolic Worry..... 413	Photographic Notes..... 445
Notes..... 414	Reviews..... 450
Educational Information:—	Scientific Progress..... 408
Pharmacy: Examinations..... 415	Scotch News..... 402
Schools..... 422	South African News..... 404
Medicine: Curriculum..... 430	Test-tubes..... 403
Qualifications..... 431	Trade Notes..... 405
Schools..... 432	Trade Report..... 451
Dentistry..... 433	Zanzibar Trade..... 444
Veterinary Surgery..... 434	

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## Summary.

**Educational information, with particulars regarding examinations and qualifications in pharmacy, medicine, dentistry, veterinary - surgery, and science, begins on p. 415, and is the principal feature of this issue.**

SOME new store-prices are printed on p. 401.

THE BUBONIC PLAGUE is kept well within bounds at Glasgow (p. 402).

THE Jersey Pharmacy Act has been renewed with trivial alterations (p. 401).

NEW English oils of lavender and peppermint are offering at lower rates (p. 451).

MR. ALCOCK would like to see graduated test-tubes for the use of students (p. 408).

WINE-LICENCES have been granted to a number of chemists, who are named on p. 402.

A REPORT on the trade of Zanzibar, dealing especially with cloves, is printed on p. 444.

THE HISTORY of one of Mr. Paul Villain's schemes is related on p. 442 and by the *Daily Telegraph* (p. 446).

THE ULSTER CHEMISTS (LIMITED) is to be voluntarily liquidated, and a liquidator has been appointed (p. 443).

THE Chairman of the B.P.C. Formulary Committee (Mr. N. H. Martin) is perched in our aviary this week (p. 403).

THE EXTRACTS OF THE B.P. have been discussed by Mr. Taylor and other members of the Cape Pharmaceutical Society. See p. 404.

DR. JOHN ATTFIELD replies to Mr. Claridge Druce, and unearths a pretty piece of misquotation from Mr. Druce's last letter (p. 447).

MR. FICK, the Ex-Secretary of the Cape Pharmaceutical Society, has been presented with a piece of silver plate by the members. It is figured on p. 404.

THE MARKETS are dull this week, and changes are few. English almond oil is 1d. dearer, opium is 3d. up in Smyrna, and quinine is cheaper in second hands (p. 451).

DISCUSSING the compulsory-curriculum proposal (appropriate to this number) we suggest that the Pharmaceutical Society should try it first on Major students (p. 410).

CORRESPONDENCE about the carbolic-scheduling continues. The Home Secretary has informed local authorities about the matter with the object of getting the law respected (p. 413).

SIR WILLIAM TURNER, as President of the British Association, opened the meeting at Bradford on Wednesday evening with a sketch of the cell-theory. We comment upon it on p. 412.

THE death of a lady from excessive doses of paraldehyde has induced a Coroner to strongly comment upon the evil of the indiscriminate sale of that drug, and his jury supported his remarks (p. 400).

SIR JOHN BENNET LAWES, the eminent agriculturist, and one of the English makers of citric and tartaric acids, died last week. An obituary notice, with portrait of the deceased baronet, is given on p. 406.

IN regard to the division of the Minor examination, we have ascertained from leading teachers that the need for it is so pressing that some of them would agree to a compulsory curriculum if it brought division (p. 410).

SOME NOTES on radiographic work by Mr. Allerston, of Pietermaritzburg, with a radiograph of a bullet-penetrated arm, are given on p. 404. Sir William Stokes addressed the meeting, probably the last he spoke at.

IN THE ARTICLE on Canadian pharmacy we give particulars of recent meetings of chemists' associations there. Reciprocity was one of the matters discussed, and apprentices will find good advice in the report (p. 445).

THE QUESTION of the B.P. as a standard under the Sale of Food and Drugs Act having been raised in a camphorated-oil case in North London, the Magistrate convicted so that the Chemists' Defence Association might take the case to the High Court for settlement (p. 440).

A SUCCINCT NARRATIVE of the Scotch affair which is causing trouble between the North and South British Executives of the Pharmaceutical Society is printed on p. 403. "Xrayser" stirs up the Scotchmen a bit more (p. 409), and several of them indignantly repudiate his last reflections (p. 447).

## English News.

Local newspapers containing marked items of news interesting to the trade are always welcomed by the Editor.

### Brevities.

The establishment of Messrs. Rayson & Co., chemists, Ringwood, Hants, was broken into on the night of August 28, and about 14s. stolen.

A runaway horse at Cambridge dashed into a large plate-glass window in Messrs. Boots' establishment, smashing it into fragments. The horse was so badly injured that it had to be shot.

The ten-months'-old son of a Hackney drug-dealer and patent-medicine vendor named Greaves, died suddenly in its mother's arms at Southend on August 30. At the inquest a verdict of death from natural causes was returned.

A Holloway house-painter named Hollyman drank a quantity of poisonous liniment on September 4 in mistake for internal medicine and died soon after. The liniment was procured from a hospital, but was in a blue-ribbed poison-bottle duly labelled.

The two-year-old son of a Stratford lamplighter named Sharp drank a quantity of marking-ink one day last week, and died in the hospital twenty-four hours later. At the inquest it was stated that he died from bronchitis induced by drinking the marking-ink.

An outbreak of fire occurred on August 27 at the chemical-works of Messrs. Burroughs, Wellcome & Co., Phoenix Mills, Dartford. Owing to the efficiency and smartness of the firm's own fire-brigade the conflagration was subdued before the town firemen arrived. The damage done was trifling.

At a meeting of the traders of Bourne held last week, and presided over by Mr. E. H. Judge, chemist and druggist, it was resolved to form a Bourne Tradesmen's Association. Mr. Judge was appointed Treasurer, and Mr. T. M. Baxter, of Messrs. Mills & Baxter, chemists, was elected upon the committee.

A large number of children from the slums, taken by the Bradford Cinderella Club on September 1 for a country holiday, wandered into a plantation and ate the seed-pods from laburnum-trees. Twenty of the children afterwards suffered from narcotic poisoning, and were removed to Bradford Infirmary. Emetics were administered and most of the children were put right, but two serious cases were detained.

### Contract Drugs.

At a meeting of the Grimsby and District Hospital managing committee on August 29, complaint was made of the drug bill being too large, and it was suggested that an improved method of obtaining drugs, dressings, and surgical instruments for the institution should be adopted. Eventually a committee was appointed to consider suggestions and report.

The Knighton Board of Guardians on August 30 considered the application of the workhouse medical officer (Dr. T. W. Graves) for an increase of salary. He stated that he sent 400 bottles of medicine per annum to the house, and putting the price at 1s. per bottle, that took 20l. off his salary, leaving only 5l. for attendance. A motion to give the medical officer an increase of 15l. was lost, as was also a further proposition for an increase of 10l. Eventually it was decided to give an increase of 5l.

At a meeting of the Burton Board of Guardians on August 30, a communication was received from the Local Government Board relative to the mode of providing drugs for use in the workhouse and infirmary by the medical officer. The Local Government Board inspector had recommended that from September 29 all drugs should be provided through a chemist at the expense of the guardians, instead of by the medical officer out of his salary as at present. The committee to whom the matter had been relegated for consideration recommended that this suggestion should be adopted, and that at the same time the medical officer's

salary should be increased from 70l. to 100l. per year. The Board deferred the consideration of the recommendation for a month.

### Paraldehyde Poisoning.

At an inquest held last week at High Barnet by Dr. Lovell Drage, on the body of Mrs. Mary Lee Tregaskis, Alice Cocher, the nurse in attendance on deceased, said she discovered among the medicines a bottle labelled "Paraldehyde," but as she had never heard of it before she particularly inquired how she was to administer it. It was not labelled "poison" in any way, and she was told a dose was 2 dr. Mrs. Tregaskis had no fewer than five doses in twenty-four hours, during which time she took little or no nourishment. On the following night, as she was so restless, witness gave her a teaspoonful of paraldehyde, and another between 4 and 5 in the morning. At 9 o'clock the patient refused her breakfast, but asked for more of the drug. Later in the day witness had to temporarily leave the patient, and on her return she was worse and gradually sank and died in the afternoon. Witness found the bottle of paraldehyde under the patient's pillow and about 2 oz. gone.

The Coroner (examining the bottle): This bottle had no precautionary label on it. It is simply labelled "Paraldehyde," with no directions as to use. It was sold, according to the label, by "Jones Bros., Holloway Road, N.—E. A. Slater, chemist, by examination." Taken in proper doses it is a good thing for asthma, but it is a very dangerous drug, and would cause death if a person drank 2 oz.

Dr. D. R. G. Corrigan, in the course of his evidence said there was a case on record of recovery after taking 3½ oz. In his opinion, however, the immediate cause of death was an overdose of paraldehyde.

The Coroner: How is it possible for an ordinary person to obtain such a quantity of this stuff from a chemist?

Witness: It is not a registered poison.

The Coroner: No; but I cannot arrive at any idea how a chemist can sell that quantity without a doctor's prescription. There must be 6 or 8 oz. in a bottle like that.

Witness: It is a very strange thing.

A Juror: But the firm from whom that was obtained are not even proper chemists.

The Coroner: But they have at the top of the label—"Slater, chemist, by examination." I do not quite know how that part of their business is worked, but if he has done wrong in supplying this quantity I suppose he will be responsible.

A Juror: Why should they be allowed to sell such a quantity without labelling it "Poison."

The Coroner: I do not suppose it would have made much difference what was on the label, because when people are in the habit of taking drugs in this way they will get them somehow or other, and they will drink them irrespective of what happens to be on the labels. The only thing wrong in my mind is that a chemist should be allowed to sell such a large quantity of poisonous substance to the public without any restriction at all.

In the course of a very lengthy summing-up the Coroner said, regarding the question as to whether proper care was taken with regard to the drugs, so far as the nurse was concerned she had had no instructions given her about paraldehyde, and, of course, nurses as a rule did not know anything about the physiological action of drugs or their nature. The law which allowed that class of remedy to be sold freely was, he thought, more responsible than the nurse or anybody else connected with it. People who had no knowledge of drugs could not tell whether the substances were lethal, or in what degree they were lethal, and if persons were allowed to buy them in such large quantities they naturally came to the conclusion that they were harmless.

The jury returned a verdict that the deceased died from an overdose of paraldehyde, and added an expression of opinion that they considered that such a dangerous drug as paraldehyde should not be allowed to be sold in such quantities, nor without being properly labelled "Poison."

The Coroner said the whole law regarding the sale of these lethal drugs was in a very unsatisfactory condition. People read and heard enough about the sale of alcohol, but although that killed, no doubt, a great many people, drugs killed a great many more in consequence of the easy way in which the public could obtain them.

## Jersey News.

Mr. Joseph Collenette, eau-de-Cologne manufacturer and perfumer, 1 King Street, St. Helier, Jersey, has transferred his business to Messrs. Julius Hettich & Sons, of Cardiff.

Mr. W. H. Davies, of the Sarnian Pharmacy, Mill Street, St. Peter Port, Guernsey, has purchased all the trade recipes and prescription-books of the business lately carried on by Mr. H. E. Harold in Smith Street, and will in future supply Mr. Harold's specialities.

At a special sitting of the Jersey States on September 3, though it is unusual to deal with ordinary legislation out of session, the House, on the motion of Judge W. Duret Aubin, readopted the Pharmacy Act passed three years since. The measure is precisely the same as before, save that provisions granting certain privileges to those in business before its adoption now naturally disappear, having lost their *raison d'être*.

## The "Chemist" and his Hair-wash.

At Coventry Police Court on Monday, Henry Thomas Record, described as a chemist, and Naomi Record, his wife, were jointly charged with stealing, at Sheffield, a lady's gold and silver watch, gold ring, and gold chain. The Deputy Chief Constable asked for a remand, and also for authority to hand prisoners over to the Sheffield police. It transpired that the male prisoner has been travelling the country, and a police notice issued by the Chief Constable of Sheffield stated that "this man calls on hairdressers, chemists, and pickle-merchants with recipes for hair-wash, pickle-making, &c." The couple arrived in Coventry last week-end, and on Monday the man called upon Mr. J. B. Gardner, a Coventry hairdresser, with a recipe. He gave the name of Record, and after he had left Mr. Gardner noticed in a trade-paper a copy of the Sheffield police-notice for the arrest of a man of this name. As the man answered the description given, Mr. Gardner communicated with a police inspector. The latter made inquiries and found that the man had been calling upon most of the local hairdressers with his hair-wash recipe, and at one establishment he had promised to call again. This he did, only to find himself confronted by the inspector, who then apprehended him. Subsequently the officer went to a public-house where the man had been staying, and there arrested the female prisoner. Both prisoners were remanded.

## Dec. Sarsæ in the East-end.

At the hearing of a case before Judge French in Bow County Court on August 31, defendant described himself as a sarsaparilla-merchant.

Judge French: What is sarsaparilla—a medicine or a beverage?

Defendant: Something of both; it's good for the inside.

Judge French: But what do they drink it for?

Defendant: It's grand for the blood.

Judge French: Oh, then they don't take it for pleasure?

Defendant: Not much; they drink it most when the pubs are shut on Sunday.

## A Mysterious Poisoning.

At an inquiry held on August 30 at Sale, touching the death of Erica Payne, aged 5, it was stated that when the child was taken ill her mother gave her a dose of homœopathic medicine at intervals. She became worse, and doctors were sent for, but the child was dead before they arrived. Dr. F. Riley said he had made a *post-mortem* examination of the body. Death was due to some irritant, but what it was he could not say. The arsenicum pilules which had been given to the child might account for what he had found. Gelsemium (which had also been administered) was, like arsenic, a dangerous drug, and should not be given except under medical advice. The symptoms were as characteristic of poisoning by food as of poisoning by drugs. Evidence being given that the child had eaten tinned rabbit on the day she was taken ill, the inquest was adjourned pending an analytical report on the contents of the stomach.

## Carbolic Cases.

Mr. Morris Dicker committed suicide at Eastbourne last week by drinking carbolic acid.

William Barker, a Todmorden horsekeeper, drank a quantity of carbolic acid on August 27, and died.

A young man named Robert Jones, living at Wolverhampton, committed suicide on August 25 by drinking a quantity of carbolic acid.

## Bits from Birmingham.

Round about the watery districts of Yardley Wood may be seen several medicinal herbs and plants. Amongst them a botanist has recently found *Mentha sylvestris*, *Mentha Piperita*, *Valeriana officinalis*, and *Rhamnus Frangula*.

A number of cabmen's shelters, with accommodation for a caretaker and facilities for preparing meals, have been fitted up in various parts of the town through the generosity of Mr. Cadbury, of cocoa fame, and Mr. J. H. Chance, the alkali-manufacturer.

A case was reported the other day in which, through an escape of coal-gas, a man lost his life and his wife very nearly so. By artificial respiration, ammonia-inhalation, and hypodermic injection of strychnine the woman after a long time regained semi-consciousness, and was removed to the Queen's Hospital, where strong libations of oxygen were administered, and hopes are entertained of her ultimate recovery.

Recently a young woman cyclist at Balsall Heath ran down a young married woman. Brandy was administered to the injured woman whilst unconscious, but she died, and a series of letters have appeared in the papers to show that such a proceeding in such a case was very wrong, because when in such a condition a patient could not swallow, and there was fear of suffocation, owing to the liquid passing down the windpipe. This is useful to know.

The press of Birmingham has:—"By order of the Privy Council, which came into force on Saturday, carbolic acid can now be purchased from registered chemists only, who will have to label it with the name and address and the word 'Poison.'" It is hoped such a notice will have a salutary effect in stopping illicit sale of poisons, which is carried on to an alarming extent in this town by the great unqualified. The saving clause "for agricultural purposes" has soon been taken advantage of by these.

On August 27 the students of the Birmingham School of Pharmacy visited the home of their tutor, Mr. F. H. Alcock, at Brandwood Farm, for the purpose of botanising. They left Birmingham at 2.30 and went by train to King's Heath, at which station a carriage was waiting to convey those who cared to ride to Brandwood Farm. On arrival the party proceeded to examine the greenhouses and well-appointed gardens of their host. After about one and a half hours' work a sumptuous tea was partaken of, and then a number of fields belonging to Mr. Alcock were gone through, and a goodly number of specimens recovered. Amongst them were: *Datura Stramonium* (in fruit), *Symphlytum officinale*, *Malva sylvestris* (in flower), *Aconitum Napellus* (in flower), *Lavandula vera* (in flower), and *Ruta graveolens* (in fruit and flower). A very pleasant day was passed, and before leaving refreshments were provided, and hearty thanks awarded to Mr. and Mrs. Alcock and the ladies of the house.

## The Spectacle-makers' Company.

The next examination under the company's opticians' registration scheme is to take place in November, the latest date for entries being October 31. The clerk of the company (Col. T. Davies Sewell) also asks us to state that he is preparing an official list of certificated opticians for the guidance of the public, and would be glad if gentlemen who hold the S.M.C. diploma will communicate to him the business address where the diploma is exhibited, so that the list may be made as correct as possible. A Glasgow optician has publicly apologised for describing himself as a "F.S.M.C. by Examination" he being neither a fellow of the company nor had he passed any of the company's examinations.

## Store-prices.

The Army & Navy Civil Service Stores circular contains the following "additions" and their prices:—

Armour & Co.'s pepsin porci, 2s. 4d. per bot.; pepsin tablets, 10d. and 2s. 2d. per bot.; lactated pepsin, 2s. per bot.; elixir

lactated pepsin, 1s. 1d. and 1s. 9d. per bot.; glycerin extract of redbone marrow, 1s. 6d. and 2s. 9d. per bot.; beef-juice, 1s. 9d. per flask; beef and vegetable tablets, 10½d. per bot.; Basket containing Sparklet bot., with plated cup, 17s. 6d. each. Bullet fly-catchers, 8d. per doz. Effervescing tablets of Kissingen & Vichy, 1s. 9d. per box. Web support-belts, 5s. 6d. each. Antikito cream, 2s. 9d. per bot. Berge's Ozono lamp, 10s. complete. Formalin atomiser (nickel-plated), 4s. each. Plasmon, 8½d., 1s. 3d., and 2s. 4d. per pkt.; biscuits, 1s. 5d. per box; chocolate, 2s. 9d. per lb. Vermite, 5d. and 9½d. per tin; in bellows, 10d. each. Vitalia meat-juice, 11d. and 2s. 3d. per bot. Pabst malt-extract, 12s. per doz. bots. Spiritine, 2s. 9d. and 4s. 8d. per doz. tins. Thermogene, 11½d. per pkt.

#### Chemists' Licences.

Off wine-licences have been granted to the following:—

Mr. A. V. Griffiths, chemist and druggist, Longton.  
Mr. David Innes, chemist and druggist, Stalybridge.  
Mr. L. L. Stroud, chemist and druggist, Tewkesbury.  
Mr. William Vaughan, chemist and druggist, Denton.  
Mr. John Wakefield, 8 Broad Street Corner, Birmingham.  
Mr. Edward Crosley Carr, chemist and druggist, Normanton.  
Mr. John Scott Flower, chemist and druggist, Ravensthorpe.  
Mr. Benjamin Charles Greening, chemist and druggist, Hove.

Mr. Cecil Thomas Steel, chemist and druggist, Southampton.

Mr. Frederick William Jackson, chemist and druggist, Audenshaw.

Parke's Drug-stores (Limited) for their shop at 173 High Street, Chelmsford.

Mr. David Pattison, manager of Taylor's drug-stores, 12 High Row, Darlington.

Mr. Joseph Graham, chemist and druggist, 448 Scotswood Road, Newcastle-on-Tyne.

The following off spirit-licences have been obtained:—

Messrs. R. & J. A. Sturton, 119 and 120 Fitzroy Street, Cambridge.

Mr. Lawrence Priestley, pharmaceutical chemist, Newark.

#### Grocers and the Carbolic Regulations.

A communication was submitted to the Rhondda Grocers' Association at their meeting on September 4 from the Secretary of the Federation of Grocers' Associations calling attention to the scheduling of carbolic acid. The Secretary explained the new regulations, and recommended grocers to insist upon a written guarantee from manufacturers, and also upon an indemnity in case of prosecution. The circular added that restriction had been placed on the sale of this article ostensibly for the public safety, but the fact that the action was taken on the initiative of the trade-protection society of the chemists suggested the unfairness of traders being permitted by Act of Parliament to set up such monopolies.

#### A Chemist's Assistant's Death.

An inquest was held at Darlington, on September 4, on the body of George Chrisp Lawson, who had been employed as an assistant with Mr. James Robinson, pharmaceutical chemist, Northgate, Darlington. Deceased was found on his bed dying, and a small bottle which had contained prussic acid was beside him. A verdict of suicide while temporarily insane was returned.

### Irish News.

Local newspapers containing marked items of news interesting to the trade are always welcomed by the Editor.

#### Poisoning with Liquor Potassæ.

Recently a man named John Doyle died in the Baggot Street Hospital, Dublin, from the effects of having drunk liquor potassæ. When in the hospital Doyle stated he had taken poison accidentally. At the inquest a verdict of poisoning by misadventure was returned.

#### Dublin Horse-show.

At the Royal Dublin Society's Horse-show last week the Permanent Nitrate Committee of London had a show of

caliche, similar to the one at Cork in July (*C. & D.*, July 14, page 45).

#### Chemical-workers' Strike.

About sixty workmen employed at the chemical factory of Messrs. W. & H. M. Goulding (Limited), of Cork, have gone out on strike. The men, whose wages average 16s. per week, demand a 2s. rise, but the company will only grant 1s. per week advance.

### Scotch News.

Local newspapers containing marked items of news interesting to the trade are always welcomed by the Editor.

#### Accepted.

At a special meeting of the University Court of St. Andrews University on September 1, the offer of 20,000l. from the Marquis of Bute to endow a chair of Anatomy was cordially accepted on the conditions stipulated. The first presentation to the chair of Anatomy is in favour of Dr. Musgrove, the present anatomy-lecturer. The Court likewise resolved to continue the present lectureship in botany as a permanent lectureship, and to proceed at once with the creation of a professorship of physiology to come into effect on the death or resignation of the present Chandos professor of medicine.

#### Edinburgh Chemists' Golf Club.

The fifth and final round of the Hole-and-Hole competition which began in April, was played on August 29 over the Braids course, the finalists being Messrs. T. D. Burt and W. C. Baker. Mr. Burt, who received four holes, beat Mr. Baker by 3 up and 2 to go.

#### Bubonic Plague in Glasgow.

Professor Muir, of Glasgow University, having reported that the new epidemic is really bubonic plague, there has been some anxiety lest it should spread over a wide area. So far it has been confined to one district, and all who are known to have been in contact with any members of the families affected have been isolated. In this way upwards of ninety persons are kept in two receiving houses, under constant medical supervision and inspection. The total number of actual cases has been thirteen, and of these two died, one shortly after admission to the hospital. The other eleven are progressing quite favourably, and in some cases the disease has run its course. It would appear, therefore, that medical science is now able to cope with the disease if it be taken in time. In addition to the cases mentioned above, two suspicious deaths occurred at the end of last week, and it is probable that one of these was due to the plague. If this be so, it indicates the almost criminal reluctance which the poorer classes show in intimating sickness to medical officers. So far there is little excitement to be seen. The newspapers, by their prominent posters, are doing their best to make the affair look big and thus sell their papers, but the mass of the population is quite indifferent as yet. Mercantile circles are, however, anxious about the sea-going commerce of the port, for this means much to a city like Glasgow. The sanitary authorities are fully alive to the importance of the situation, and every effort will be made to stamp out the disease before it gets a hold. It is generally thought that the plague has been introduced by Lascars, who hawk mats from door to door which may possibly be harbours of microbes.

Writing about the exaggeration of the state of affairs in the infected districts, a correspondent protests against the way in which the newspapers have raised a scare. Even the *Glasgow Herald* at first gave a very excited account of what was transpiring, and last week it spoke of the streets being deserted by children, and so on. Our correspondent walked on Sunday evening through the Gorbals, the heart of the infected district, and every symptom proclaimed the absolute indifference of, and absence of excitement in, the population. The children were playing about as usual, hundreds of them; the women, content in their rags and dirt, sat on the pavement-edge, and the men lounged and smoked. This

occurred all along Adelphi Street, which runs by the side of the river at right angles to the infected streets. All the ice-cream shops were crowded, as usual, the electric cars were crammed, and the promenaders occupied Crown Street in their thousands. The same lounging serried row leant or sat on the balustrade of Albert Bridge, and thousands crowded the Orange and Catholic disputants in Jail Square. The Gorbals is the lowest part of Glasgow, and the slums are simply horrible, but in all that hour's walk our correspondent says he never heard an oath, never saw a drunken person, and not even a policeman. The latter he specially looked for, as he wanted information about the plague, but "Robert" was not to be seen. Our correspondent's observation led him to the conclusion that the statements in the newspapers are grossly exaggerated. The crowds showed the usual stolidly indifferent or vacantly happy expression of people who have not a care in the world.

#### Fire.

On September 2 fire was discovered to have broken out in the under flat of the County Hall, Castle Street, Stranraer, occupied by Mr. James Dorman, chemist, the owner of the property. The fire brigade was summoned, and when an entrance was made it was found that the fire had a very firm hold, principally in the front of the premises. After half an hour's hard work the flames were extinguished. Considerable damage was done to the property, and the stock was entirely destroyed, the total loss being estimated at 500*l*.

#### Sceptical about Vaccination.

At the Dundee Sheriff Court on September 4, William Scott, chemist's assistant, Lochee Road, pleaded guilty to a charge of failing to have his child vaccinated. The accused stated that several attempts had been made to vaccinate the child, but these had not been successful. He feared the vaccination more than prison. The Sheriff said that accused ought to have got a doctor's certificate to the effect that the child was not subject to vaccination. It was rather strange how the accused, who always worked among drugs, could maintain his scepticism on the subject. The penalty would be a fine of 7*s*. 6*d*., or three days' imprisonment. Accused paid the fine.

#### Scottish Pharmacists and the New By-laws.

The opposition which has manifested itself in Scotland to the proposed new by-laws of the Pharmaceutical Society has assumed such a formidable character that it may be as well to recall the events which have led up to the present crisis. Some of them have already been noted in these columns, but a consecutive statement of them may be useful in revealing their significance and in showing their relationship to the existing situation and the reasonableness of the attitude taken up by Scottish pharmacists.

About a year ago a student from Manchester was admitted a candidate for the Minor examination before the Scottish Examining Board. He travelled to Edinburgh, went through the practical examination, and returned to Manchester with the intention of coming up in due course for the oral. He again undertook the journey from Manchester to Edinburgh, but was unfortunately taken so ill on the way that when he reached his destination he was totally unfit to enter on the examination. In order to satisfy the Examining Board of his condition he drove from the station to the Society's house in York Place, and his appearance was sufficient to assure the examiners that it would be quite unfair to require him to go through the examination. Accordingly he was allowed to return home with all speed, and immediately on his arrival he summoned a doctor who gave him a certificate that he was suffering from acute rheumatism with a temperature of 102°. The candidate sent the certificate to the Examining Board, and on receipt of it they intimated that they would allow him to come up at a subsequent examination on payment of the nominal fee of one shilling. This was in accordance with By-law 23 of Section X. (passed in 1879), which, it may be mentioned, codified an unwritten law which had been acted upon for many years before then. At this point the London Council stepped in and said the Examining Board had wrongly interpreted the by-law, and ordered intimation to be made to the candidate that he could not come up again unless on payment of three guineas, their contention being that the nominal fee applied

only to those who were absent from some proper cause from the first or practical portion of the examination.

This new reading of the by-law took the Board by surprise, and in the correspondence which ensued they were unable to convince the Council that, in refusing to allow the candidate to come forward on payment of the nominal fee of one shilling, they were making a new rule.

The Examining Board were, however, unwilling to allow the matter to rest. Indeed, so strongly did one of the examiners feel on the matter, that he threatened to resign his position in connection with the Society. He was, however, induced to withdraw his threat on the distinct assurance, given by a leading member of the London Council that the Scottish Board's interpretation of the by-law would be adopted by the Council, and that the Board need not trouble further in the matter.

This was the situation of affairs on the point when another student, this time a Scotsman, was taken ill in the period between the Practical and the Oral examination in July last. He sent in a medical certificate, thus complying with By-law 23, and the examiners intimated that the student could come up at the next examination on payment of one shilling. This was reported to the Council in due course, and again orders were received from London to intimate to the student that he could not come up unless on payment of the larger fee.

In these circumstances the Board communicated with the Privy Council, who replied that they had no power to interfere, leaving it apparently for the law courts to interpret the by-laws. The Board felt that it was not their duty to test the matter in that way; but at this juncture it appears that the question is likely to be submitted for judicial settlement independently of them. The rejected student has taken the opinion of counsel with the view of raising an action against the Pharmaceutical Society in the Court of Session, asking the Court to ordain the Society to admit him to the Oral examination on payment of a fee of one shilling.

Notwithstanding the promise given by the member of Council previously referred to, the provision on which the Scottish Board acted has been abolished, and no excuse for absence will now be accepted, the uniform fee of one guinea being imposed on all absentees, with a possible three guineas should the Council so determine, and the by-laws so altered have been passed. Lulled into confidence by the emphatic assurance they received, the Scottish members did not inquire into the matter, and it was only when too late to make effectual opposition before the Council, or at the Society meeting, that they became aware of what had been done.

These are the circumstances which have led to the presentation to the Privy Council of the memorial which was printed in the *C. & D.* on August 25. It has been signed by nearly 700 pharmaceutical chemists, chemists and druggists, and pharmacy students in Scotland. The matter at issue affects England as well as Scotland, and it might be instructive to ascertain what support the memorial would receive among chemists south of the Border by giving them a fair opportunity to sign it. So far as Scotland is concerned the support given to the memorial reflects the state of feeling towards the society, which has been growing gradually of late, but which has received a strong impetus through the circumstances here narrated.

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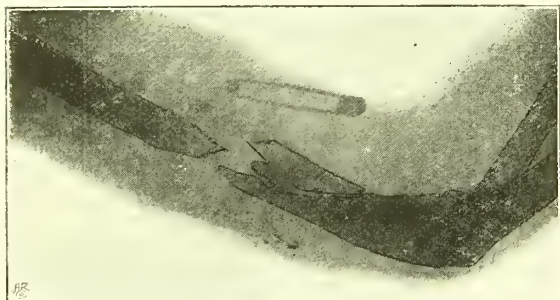
**MORE THAN SCIENCE WANTED.**—A well known professor relates that some years ago, he travelled across the Atlantic with a pharmaceutical chemist from the other side, who was an enthusiast in his craft, and who contended that the two essentials in its due exercise were effectiveness and elegance. He was asked to explain. "Well, sir," he said, "when a drug goes straight home, sticks strictly to business, and doesn't have to go fooling round the whole constitution, it is effective. We reach effectiveness through scientific knowledge." The force of his contention was admitted, the expression, "fooling around the whole constitution," touching a chord in memory. "In elegance, sir, we touch higher attributes," he continued. "When I was a boy, the taking of drugs was just a nightmare; now it may be one of the choicest pleasures in life. That is what elegance has effected. But, sir," he added, "scientific knowledge will not suffice to produce elegance in a preparation. That requires insight and a subtle sense of moral and æsthetic fitness." BLEN

## South African News.

(From our Cape Town Correspondent.)

**USING ANOTHER FIRM'S BOTTLES.**—On August 14, in the Supreme Court at Cape Town, Messrs. Pillans & Co. obtained an interdict, with costs, restraining the Ariston Mineral-water Company from using bottles and boxes bearing the applicants' trade-mark, and for the delivery of all such bottles and boxes in the respondents' possession. There was no defence to the action.

**A RÖNTGEN-RAY EXPERT.**—At the Maritzburg Camera Club on August 1 Mr. A. Allerston, of the firm of Stantial & Allerston, chemists (whose work with the R.A.M.C. in Natal



RADIOGRAPH OF AN ARM SMASHED BY A MAUSER BULLET.

(Taken through the bandages, the safety-pin being attached and not in the flesh.)

we illustrated in our issue of May 26 last), gave an interesting "Demonstration of Röntgen Rays" to a crowded audience, amongst those present being Sir Wm. Stokes and Surgeon-Captain Currie. Mr. Allerston, who has been using the apparatus in the military hospital work, gave exhibitions of the advantages of the rays, and experimented on some of the audience. One well-known citizen, who has carried a portion of a bullet in his arm for twenty years, submitted himself to the process, and the embedded missile was plainly noticeable in his arm. Sir William Stokes, the well-known consulting surgeon to the forces (whose sudden death we mentioned in an issue of August 25), in proposing a vote of thanks to the lecturer, made a very interesting speech, in which he explained the great advantages which had accrued from the use of the Röntgen rays in locating bullets, and also referred to the skilful manipulation of the instruments by Mr. Allerston. Surgeon-Captain Barrie (Natal Carabineers) said it was their loss in Ladysmith and a gain to the military authorities of Maritzburg when Mr. Allerston was recalled to headquarters the day before the investment of the former town. A number of photographs of the effects of the rays were handed round, and were very interestingly examined by the audience. South African chemists who have undertaken special work like the lecturer have evidently obtained a much higher status with the army than their colleagues who went out from Aldershot.

### Cape Colony Pharmaceutical Society.

A special meeting of the Pharmaceutical Society of Cape Colony was held at the Victoria Hotel, Cape Town, on August 8, the President (Mr. F. W. C. Thomas) in the chair. Among those present were Mr. J. A. Mathew (President of the Colonial Pharmacy Board), Mr. Helmore (of Helmore & Aldridge, Kimberley), Messrs. Geo. Darroll, W. Fick, Jeffrys, Ratcliffe, Cameron, and Geo. Hamilton, and the Secretary, Mr. Trembath (of Johannesburg), Mr. Geo. Pearson (Burroughs, Welcome & Co., London), and Mr. Richardson (Evans, Lescher & Webb, London) were amongst the visitors.

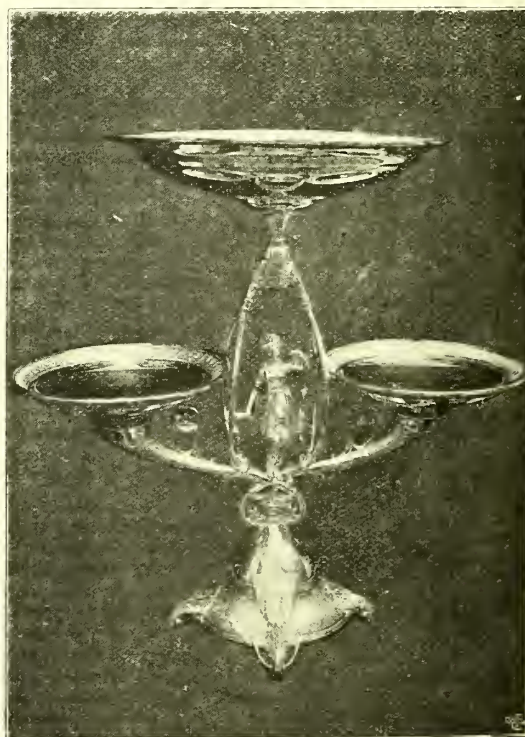
The small amount of general business having been discharged or postponed till the next meeting, the Chairman introduced to the members present Mr. C. Ludlow Tayler, Ph.C.Gt.Brit., who had consented to give a short paper on

### THE EXTRACTS AND ALTERATIONS, B.P., 1898.

Mr. Tayler in his paper dwelt at some length on the extracts of belladonna. He questioned whether the alcoholic extract was generally meant by the prescriber, as both in England and South Africa the green extract is in greater demand, and it is intended by the medical man. From a pharmaceutical and therapeutical point of view he could not see what advantage there was in having an extract so loaded with green colouring. Had an extract been made from the clarified juice and standardised to contain, say, 1 per cent. of alkaloid—the same strength as the root-extract—it would, he thought, be a change in the right direction. According to Squire, it contained anything from 0.70 to 1.7 per cent. of alkaloid, which was most unsatisfactory, especially when it was remembered that belladonna was one of the more potent extracts of the present Pharmacopœia. As long as the green extract remained official irregularities would continually crop up. Extract. nucis vomicæ liquidum Mr. Tayler considered a most satisfactory preparation, while the reduction in strength of fluid extract of opium, in order to make it of the same potency as the tincture, was worth a passing remark.

In Continental Europe hypodermic injections are as common as mixtures, proving a good source of income to the pharmacist. He thought that the reason hypodermic injection of morphine was not in greater demand in England was on account of its being too strong, and the uncertainty of being able to inject 2 or 3 minims. When a medical man wanted to inject  $\frac{1}{2}$  gr. of morphine on the Continent he would order a solution of 0.013 (13 milligrammes in each c.c.), but to inject  $\frac{1}{2}$  gr. of morphine tartrate, using the B.P. injection, it would be necessary to employ 4 $\frac{1}{2}$  minims.

Several of the liquors and a few oleates then came in for a share of attention, special reference being made to liquors, such as chiretta and quassia, introduced, he said, no doubt, to take the place of the trade concentrated infusions. The Medical Council say these may be "prescribed" in place of the corresponding official infusions; but it did not say that



MR. FICK'S PRESENT.

chemists might employ them for dispensing when infusions were ordered.

Continuing, Mr. Tayler said it was particularly noticeable that no tests are given for testing the purity of the iron

wire used in preparing certain syrups. Easton's syrup was supposed to contain  $\frac{4}{5}$  gr. quinine sulph. in each drachm but it really contained  $\frac{13}{16}$  gr. Although this was very near, still accuracy in the official guide was expected.

The time was opportune to make some remarks on sodium phosphas and its effervescent preparation, seeing that the Government had already collected samples. The speaker had analysed several samples, and found them all to contain arsenic.

The latter fact was afterwards borne out by Mr. Thomas, who had that very day analysed his stock, purchased from a London house, and found arsenic in it.

A discussion on this and other points then ensued.

Mr. Fick gave notice that it was his intention to bring up at the next general meeting the question of the erratic way in which the Customs drifted from one duty to another.

The Vice-President (Mr. J. A. Mathew) then presented a piece of plate, on behalf of the Society, to the late Hon. Secretary (Mr. W. Fick). Mr. Fick, in returning thanks, said the Society was forging ahead satisfactorily, and he hoped at an early date to see it even more powerful.

A hearty vote of thanks was then extended to Mr. Tayler for his paper, and the proceedings terminated.

## Colonial and Foreign News.

**PHARMACY IN PORTO RICO.**—An order has been recently issued regulating the practice of medicine, pharmacy, and dentistry in Porto Rico, which provides for an examining committee of three physicians, two pharmacists, and one dentist to conduct examinations under rules made by the Superior Board of Health. The members of this committee must all be of ten years' standing and recognised professional ability, and must speak English. The Superior Board of Health appoints the President and Secretary of this committee, and the examinations are all written and the papers submitted to the Board, by whom licences are issued to the successful candidates. The examination-fees are:—For physicians and surgeons, \$25; pharmacists, \$25; dentists, \$25; practicanes, \$15; professional nurses, \$10; and midwives, \$5. Offenders against the order may be punished by fine or imprisonment.

**GIBRALTAR PHARMACY ACT PROSECUTION.**—Dr. A. J. Triay, of Triay's Pharmacy, Gibraltar, was charged before the Police Magistrate on August 20, at the instance of the Calpe Chemists' Association, with having sold, through an assistant, a quantity of laudanum and some belladonna ointment, without affixing any labels, or using an hexagonal poison-bottle as prescribed by the Pharmacy Ordinance, 1898. The evidence showed that the assistant sold, on August 13, to a boy 16 years old, threepennyworth of laudanum in a soda-water bottle which he did not label, and twopennyworth of belladonna ointment, also unlabelled. Defendant pleaded guilty, and was fined 1*l.* and costs. This is the first case reported to the authorities since the Pharmacy Ordinance came into force, and as the assistant who sold the poisons, and who is in charge of the shop, is unqualified, the Association, it is stated, contemplates taking proceedings against him also.

**P.A.T.A. OF CANADA.**—The third annual meeting of the Proprietary Articles Trades Association of Canada was held at Toronto on July 24 and 25. The Secretary's report showed that sixty of the principal proprietary-manufacturers in the Dominion were members of the Association. The following officers were elected:—Hon. President, Hon. G. T. Fulford, Brockville, Ont. (Dr. Williams' Medicine Company); President, J. A. McKee, Toronto (Dodd's Medicine Company); Vice-President, Henry Miles, Montreal (Leeming, Miles & Co.); Secretary-Treasurer, L. S. Levee, Toronto (T. A. Slocum Chemical Company, Limited). The principal business transacted was the passing of a resolution to oppose a Bill recently introduced into the Ontario Legislature and known as the German Bill, which measure, it was stated, would restrict and unduly interfere with the commercial and manufacturing interests of the country. A successful banquet was held the same evening under the chairmanship of the new President (Mr. J. A. McKee), at which Mr. H. Miles, proposed the toast of "Canada."

## Trade Notes.

**MESSRS. MCDUGALL BROTHERS** inform us that besides their liquid carbolic acids, their patent carbolic purifier will in future be labelled poison.

**EACH** of the seven sections of the German Chemical Industry Court of the Paris Exhibition has received a Grand Prix, and we understand that the honour is shared by the individual exhibitors, including Mr. E. Merck, of Darmstadt.

**SACCHARIN.**—Through inadvertence there was inserted in the *C. & D.* last week an advertisement of the Anglo-Continental Chemical-works which referred to an action against the company which was dismissed with costs on "the 6th instant." The date meant was July 6.

**THE VINOLIA COMPANY (LIMITED)** announce that, as Lord Roberts has issued proclamations annexing both the Orange Free State and the Transvaal, they have decided to close the Vinolia War Fund, which has been in operation nearly a year, and amounts to, as near as they can say, about 11,000*l.*

**PARIS EXHIBITION GUIDE.**—The new edition of the Anglo-Saxon Guide to the Paris Exhibition, published by Boot & Son, 24 Old Bailey, E.C., contains an alphabetical list of the awards to the British exhibitors. The article on chemical industries is by Mr. C. E. Sage, F.C.S., the principal of the Central School of Pharmacy.

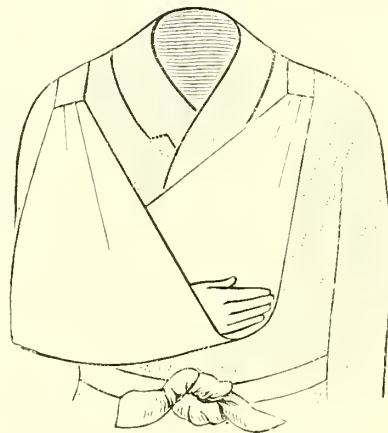
**GADD'S SYNOPSIS** of the B.P. has now reached its fifth edition. Many useful additions have been made in the table of the contents of the Pharmacopœia, sp. gr.'s and alcohol strengths have been added to the tinctures, and the various suggested standards and improved tests suggested by recent work, noted. The price still remains at 1*s.*

**A COMPANY** has recently been formed for the purpose of extending the sale of "Hedakene," and we are informed that it is intended to spend a considerable sum of money to bring it to the front by legitimate means, and "so create an unparalleled public demand." The powders are packed in small gilt boxes suitable for carrying in the waistcoat pocket, and they sell at 1*s.* and 7½*d.* a box. It is intended to place the article on the P.A.T.A. list.

**ADJUSTABLE ARM-SLING.**—The Sanitary Wood-wool Company (Limited), of 26 Thavies Inn, E.C., have recently introduced a patent arm-sling,

which is one of the cheapest and best of the kind. It is made of strong cotton, and is adjusted to the body in the manner shown in the illustration, two long straps crossing the back like braces, and ties, attached to the ends of the straps, come round the waist as shown. The sling can be used for either arm, and is one of the most comfortable that we have tried.

It specially intended for use indoors and in hospitals, and retails at 1*s.*



**IN PRAISE OF EUQUININE.**—The attractive pamphlet issued by Messrs. Zimmer & Co., of Frankfort-on-Main, drawing attention to the virtues of Euquinine possesses one or two novel features. The outside cover is a striking combination of heliotrope with gilt lettering, and was much sought after at the B.M.A. meeting at Ipswich where we first saw it. It contains a summary of medical opinions from all parts of the world, and a cargo of testimonials from medical men in France, Germany, Italy, Austria, Switzerland, Africa, Persia, Russia, Greece, Portugal, Roumania, England and America. These are printed in French, German, Italian and English.

## Marriages.

**CORNFOOT—THOMPSON.**—On September 1, at Christ Church, Lancaster Gate, by the Rev. Preb. Ridgeway, Edward James, third son of David Cornfoot, of 20 Lancaster Gate, to Marion, fifth daughter of John Thompson, of 4 Cleveland Terrace, Hyde Park, and 11 Aldersgate Street, E.C.

**HUGHES—LONIE.**—At Cowdenbeath on August 24, by the Rev. Thomas Mitchell, Robert Ferguson Hughes, chemist, Berwick-on-Tweed, to Agnes Jane, younger daughter of Mr James Lonie.

**WATTS—WATTS.**—On September 5, at Christ Church, Woburn Square, by the Rev. Prebendary Burges, Rector of Newport, Salop, assisted by Rev. Prebendary Glendinning Nash, Vicar of Christ Church, Woburn Square, John Manning Watts, eldest son of the late William Manning Watts, of 35 Belsize Park, and Mrs. Manning Watts, of 3 Crossfield Road, N.W., to Elizabeth Hill Watts, second daughter of the late Charles Hill Watts, of Kislingbury, Northamptonshire.

## Deaths.

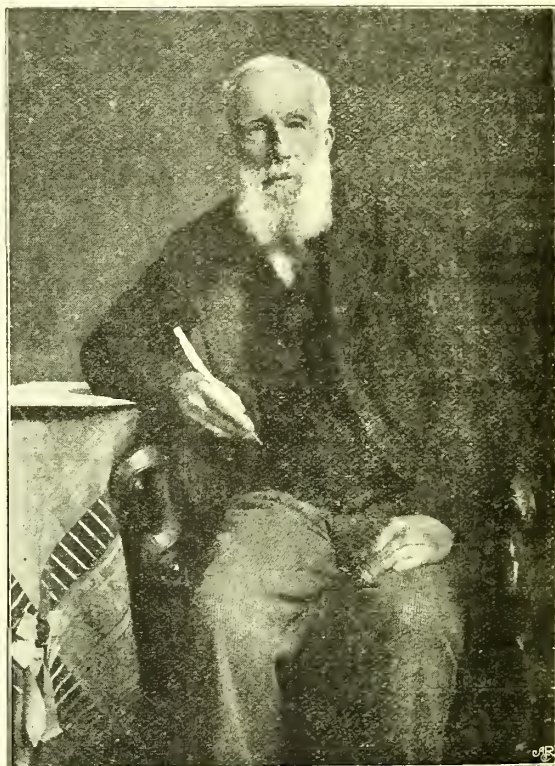
**BLANCHARD.**—At Bristol, on August 17, Mr. Thomas Blanchard, chemist and druggist. Aged 63.

**GRIFFIN.**—At Weybridge, recently, Mr. A. B. Griffin. Aged 23. The late Mr. Griffin served his apprenticeship with Mr. J. F. Brown, pharmaceutical chemist, Dover, and afterwards went as assistant to Messrs. E. Bing & Sons, chemists, Canterbury. For the last twelve months he had been in business at Battersea. Mr. Griffin had many friends both in Dover and Canterbury who will regret his early death.

**HAGENBACH-MERIAN.**—At Basle (Switzerland), recently, Apotheker Hagenbach-Merian, one of the most respected citizens, and perhaps the oldest inhabitant of the town. Aged 96. He filled during his lifetime a great number of municipal offices.

**LAWES.**—At Rothamsted, Herts, on August 31, Sir John Bennet Lawes, Bart., F.R.S., LL.D., D.C.L., D.Sc., F.C.S. Aged 85 years. The immediate cause of death was an attack of an enteric complaint which has recently been prevalent at Rothamsted. Through the death of Sir John Lawes we have lost the most notable scientific agriculturist of the century. He was the eldest son of Mr. John Bennet Lawes, of Rothamsted, where he was born on December 28, 1814, and succeeded to the estate when he was 8 years old. He was educated at Eton, and, in 1832, went to Brasenose College, Oxford, for three years. He had then taken a liking for chemical research, and studied practical chemistry in London under Professor Anthony Todd Thomson, who was one of the Pharmaceutical Society's first teachers. De Saussure's work on vegetation attracted his attention, and the cultivation of medicinal plants became his hobby as soon as he left Oxford. But fertilisers fascinated him so that he turned an old barn into a laboratory and there, in 1837, commenced his experiments on them. His friend and neighbour, Lord Dacre, called his attention to the variability of bones as a fertiliser, they being good on some lands and not on others. Thereupon the young squire, in association with a young chemist named Dobson, began flower-pot experiments with different crops, soils, and fertilisers, ash determinations being made at the end of the experiments, and from the results he deduced the fact that the best root-crops were obtained when the soil was manured with bone, or apatite rendered soluble by means of sulphuric acid. The so-called superphosphates issued from this investigation. In 1842 Mr. Lawes patented the process, having proved on extensive fields that the same results take place as in the flower-pots. He thereupon established extensive works at Deptford, and subsequently at Barking Creek, for the manufacture of superphosphate of lime. In 1872, however, he disposed of this business and, as announced by him at the time, he ceased from then to have any pecuniary interest in the manufacture or sale of chemical manures. This was the start of the superphosphate trade, the present dimensions of which may be estimated by the statement that considerably more than a

million tons of this fertiliser are annually manufactured in Great Britain alone, representing a value of considerably over two million pounds. It was at this time (1843) that Joseph Henry Gilbert, a pupil of Liebig's, became associated with Mr. Lawes as an assistant. Mr. Lawes was not at all sanguine at that time about the outcome of his fertiliser experiments; indeed, he never was optimistic about the capabilities of the British farmer in new directions. Dr. Gilbert joined him at Rothamsted because they were both enthusiastic in regard to a calomel experiment which they had seen Dr. Anthony Todd Thomson perform, and which consisted in combining chlorine and mercury as vapour together, the calomel being washed free from a trace of mercuric chloride that was always formed. Many a ton of this calomel was sent mysteriously to the London market and quietly disposed of at a low price; but the experimenters



*Yours truly*  
J. B. Lawes

*From a photograph by Messrs. Elliott & Fry.*

came to the conclusion that it would never pay, and they gave it up to devote all their time to the agricultural experiments. The world is the better for that. Continuously for nearly sixty years experiments have been going on at Rothamsted on every possible branch of agriculture, including the scientific rearing of stock. The investigations have become of world-wide reputation, and all the honours that science could give have been bestowed upon Sir John Lawes and his colleague, Sir J. Henry Gilbert. The first recognition was in 1854, when those who appreciated the work done began to subscribe for a testimonial to the young squire, and he had the money devoted to building a new laboratory to take the place of the old barn. This was opened in 1855, the Earl of Chichester presiding. It was then that the inventor of superphosphates gave utterance to his aphorism "artificial manure pays ready money. farm-yard manure pays by instalments." From that time the

research-work at Rothamsted entered upon a new era. From all parts of the country the investigators had problems submitted to them, and the solution of these with their own scheme of investigation required more and more assistance. The next outstanding event in the history of the Rothamsted laboratory happened in 1889. Sir John Lawes, by deed between himself and three trustees, leased the laboratory and certain lands at Rothamsted to the trustees for ninety-nine years at peppercorn rent, and also secured to them a sum of 100,000*l.* as an endowment-fund, the premises to be employed, under the direction of a committee, "for the purpose of scientific investigation and experiments in connection with agriculture . . . confined exclusively to original investigation and research with the view of advancing the science of agriculture." The foundation-deed provides that a person selected by the committee shall deliver in the United States, from time to time, a course of lectures upon the investigations and experiments made and carried on at Rothamsted. Amongst the Rothamsted inquiries are two problems of outstanding interest. The one relates to the effect of variations in soil conditions, under fluctuating atmospheric conditions, on the crops; the other is the reciprocal problem as to the effect of crops on the soil. The report of the fifty-seventh year of these experiments, prepared by Sir J. Henry Gilbert, has recently been issued. Sir John Lawes became a Fellow of the Chemical Society in 1850, and served on the Council from 1862 to 1865. In 1854 he received the blue riband of science, the F.R.S., and his academic honours, the Royal Medal of the Society was awarded to him and Sir J. Henry Gilbert jointly in 1867, and the Albert Medal in 1893. The Queen created him a baronet in 1882, and his co-worker Dr. Gilbert was knighted in 1893 on the occasion of the jubilee of the laboratory. In 1866 he purchased the tartaric and citric acid works that had been carried on by Mr. Firmin at Millwall. Here again his characteristic energy and love of research were brought to bear, and improvements on the somewhat primitive methods and appliances then in vogue were speedily introduced, and the policy of progress has continued to the present day. In 1890, for family reasons, and in view of his advanced age, the business was registered as a limited-liability company under the style of John Bennet Lawes & Co. (Limited), the shares being held exclusively among those already connected with it. In this Sir John took a most active interest to the end, and on the last occasion of his being in London, Monday, August 20, he visited the works to inspect some extensions and alterations that are in progress. The most considerate of employers, the kindest and most cheery of friends, he will be sorely missed by those who have worked with him, and to whom his life was an inspiration. The funeral took place on Tuesday. Among those who attended were Sir J. Henry Gilbert, F.R.S., Sir John Evans, K.C.B., F.R.S. (trustee and chairman of the Lawes Agricultural Trust Committee), Mr. Wm. Carruthers, F.R.S., Dr. Horace Brown, F.R.S., Professor H. E. Armstrong, F.R.S., Dr. John A. Voelcker, M.A., Professor Tilden, F.R.S. (for the Chemical Society), Major P. G. Craigie (Board of Agriculture), the Earl of Verulam, Sir W. T. Hiselton-Dyer, K.C.M.G., Dr. Rudolph Messel (Society of Chemical Industry), Mr. Spencer Pickering, F.R.S., Dr. Bernard Dyer, F.C.S., Professor R. Warington, F.R.S., Mr. T. S. Dymond, F.C.S., and Mr. Thomas Bennett. Sir John is succeeded in the baronetcy by his son, Mr. Charles Bennet Lawes, the sculptor.

PRICE.—On August 17, Mr. Thomas Ulock Price, chemist and druggist, London. Aged 66.

## New Books.

Andés, L. E. *Iron-corrosion: Anti-fouling and Anti-corrosive Paints*. Illus. 8½×5½. Pp. 284. 10s. 6d. net. (Scott, Greenwood.)

Clowes, F., Coleman, J. B. *Quantitative Chemical Analysis*. Fifth edition. 7¼×4¾. Pp. 591. 10s. (Churchill.)

Groves, C. E., Thorp, W. *Chemical Technology, or Chemistry in its Applications to Arts and Manufactures*. Vol III.: Gas-lighting, by C. Hunt. 9¼×6¼. Pp. 312. 18s. (Churchill.)

Stine, W. M. *Photometrical Measurements and Manual for the General Practice of Photometry*. Cr. 8vo. 6s. 6d. net (Macmillan.)

## Dewsbury and District Chemists' Association.

A MEETING of this Association was held on September 1 at Dewsbury, the President (Mr. Stead) being in the chair.

The President, after referring to the advantages accruing from their Association, referred to the loss to the Association by the retirement of Mr. Crook, of Mirfield, and to the marriage of Mr. Ingham, of Ossett. Turning to pharmaceutical matters, he said it was a matter for congratulation that the obnoxious Clause 2 of the Companies Bill had been eliminated, leaving the ground clear for further action. It was to be hoped that the Pharmaceutical Society would at once prepare a Bill that would remedy the ascertained defects of the Act of 1868. The addition of carbolic acid to the schedule of poisons—so urgently needed, but long delayed—was a step in the right direction. (Hear, hear.) He regretted, however, the qualifying exemptions, which, he feared, would be used as a precedent in the direction of relaxing the present stringent regulations with regard to other scheduled poisons. A member of the Association had referred to the Pharmacy Act as a damnable iteration of exemptions, and the latest addition to the list seemed to afford some reason for the description. He also stated that, on behalf of the Association, he had congratulated Mr. Newsholme on his election as President, and had invited him to their annual dinner, which invitation had been accepted. (Applause.)

After some further business had been reported, Mr. Broadhead (Batley), in a lengthy speech gave his views of the situation. He said the educated public and the intelligent press welcomed the addition of carbolic acid to the schedule of poisons. The grocers cried out about the protection of monopoly, but he ventured to say that if grocers had made the investment in time and money that chemists had made in order to comply with the law, they would have wanted more adequate recompense. The suggestion of an epidemic through difficulty in obtaining carbolic acid was about as senseless as the widows' clause—(laughter)—with the difference that the widows' clause had been allowed to perpetuate its power for mischief, and the epidemic nonsense would never have any connection with the supply of carbolic acid. The great difficulties which had now to be dealt with could be attributed to faults introduced into the Pharmacy Act by a certain section of the trade, calling itself the United Society of Chemists and Druggists, which wanted all the fat, and got it, as well as all the lean, leaving the bone. (Laughter.) He was afraid the faults of that society were going to be repeated by the Glyn-Jones-Wootton combination, in their anxiety to compromise between very conflicting evidence, thereby legalising the very injustices of which they now complained. In any attempted legislation the widows' clause must go—lock, stock, and barrel. In any adequate legislation chemists would have to exercise more self-denial. They would have the satisfaction of knowing that they had done something for posterity. That was the spirit of the martyrs. (Laughter.) They were really martyrs in every detail except the halo, and that was coming later. (Laughter.) He urged that chemists should all become members of the Pharmaceutical Society and good would then follow, remarking that there had been some admirable letter-writing lately, but there had been too much lace-work and frilling—too much chiffon and not sufficient underskirt. He knew, because he did some of the writing himself. He was satisfied that any future adequate legislation could only come from the Pharmaceutical Society, and the suggestion that each local association should select a delegate to confer with the Council as to Parliament should be adopted.

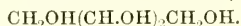
It was decided to hold the annual dinner in October.

IN KOREA there is a good field for a young and capable dentist who would be able to compete with the fine work of the American dentists who go there occasionally from China and Japan. So says the U.S. Consul-General at Seoul, in answer to a New York correspondent.

## Scientific Progress.

**Atomic Weight of Cobalt.**—Richards and Baxter (*Zeit. f. Analyt. Chemie*, 1900, 377) have made a series of careful re-determinations of the atomic weight of cobalt, using the bromide as the starting-point. The determinations all varied between the values 58.93 and 59.06, with a mean of 58.995.

**A New Sugar.**—According to Bertrand, a new carbohydrate, which he terms erythrulose, results through the action of bacterial organisms on the tetratomic alcohol, erythrite,



Erythrulose has the formula

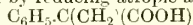


It resembles levulose very closely, but, whilst it forms an osazone which crystallises in golden-yellow needles, it does not yield a crystalline phenyl-hydrazone.—*Pharm. Zeit.*, 1900, 647.

**Parsley Oil.**—Morgues some time ago announced that he had isolated from parsley oil, besides apiol and apiin, another constituent from the fraction boiling between 277° and 285°, which he termed cariol. This body was said to have the formula  $\text{C}_{14}\text{H}_{18}\text{O}_4$ . According to Bignami and Testoni, who have quite recently examined the oil, it contains about 50 per cent. of a body to which they assign the formula  $\text{C}_6\text{H}_2(\text{OCH}_3)(\text{O}_2\text{CH}_3)\text{C}_5\text{H}_5$ , but whose properties are not described.—*Chem. Zeit.*, 1900, 198.

**Quinine Lygostinate.**—This new compound of quinine, for which very powerful antiseptic properties are claimed, is obtained by the action of quinine hydrochloride on lygostinate of sodium. It is a fine orange-yellow powder, with a faint aromatic odour, almost insoluble in water, but more readily soluble in oil or alcohol. It is used especially for antiseptic dressings.—*Jour. de Pharm. d'Anvers*, 1900, 2961.

**The Constitution of Anethol Derivatives.**—In order to confirm the constitution of the acid which anethol yields on oxidation, Bougault has synthesised para-methoxyhydrotropic acid and finds it to be identical with the above-named body. The synthesis was effected by reducing atropic acid—



—nitrating the resulting body, then reducing it to an amido acid and diazotising this. This synthesis is especially interesting, as it clearly proves the constitution of the acid derived from anethol.—*Bull. des Sciences Pharm.*, 1900, 410.

**The Absorption of Alkaloids by Charcoal.**—According to Laval (*Répertoire*, 1900, 255), who has conducted a series of experiments on the absorbing-power of charcoal on alkaloids, animal charcoal absorbs these bodies from both aqueous and alcoholic solutions—more easily from the former. Boiling alcohol removes them from the charcoal, however. The absorption is greater as the alkaloidal strength is increased, and also as more charcoal is used. But no quantitative relations could be observed. Temperature does not appear to have any influence, nor the state in which the alkaloids are (free or as salts).

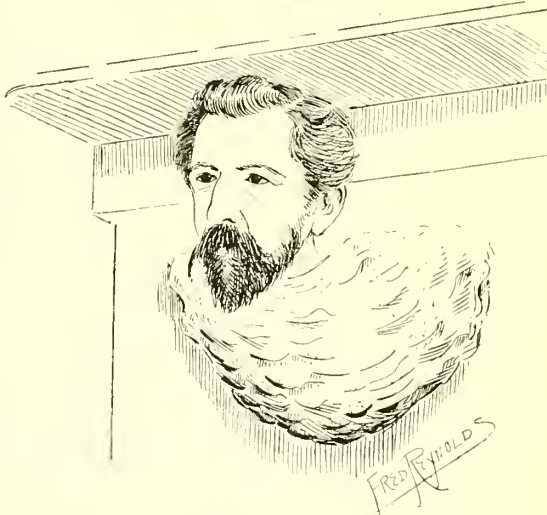
**Safe Anæsthetics.**—According to Dr. Schleich, the following mixtures are far safer than any of those at present used for surgical purposes, not a single death having been recorded from their use after a long experience in hospital work. Dependent on the temperature of the patient the following mixtures are recommended:—

	38°	40°	42°
Ethyl chloride ... ..	2	1.5	0.5
Chloroform ... ..	4	4	4
Sulphuric ether ... ..	12	12	12

—*Berliner Klinische Wochenschrift*, 1900, No. 13.

**Maripa Fat.**—The fat of *Palma maripa* somewhat resembles that of the coconut, *Cocos butyracea*, *Elæis guineensis*, and other plants, and may be employed in their place for many purposes. The plant belongs to the family of the palms, and possesses an edible fruit. The fat is obtained both by pressure and by boiling the fruit and collecting the fat which rises to the surface of the water. The expressed fat is the lightest in colour, and of the better quality; it has a mild taste, and a faint, not unpleasant odour. In parts of the West Indies it is employed in the place of butter. It has a sp. gr. 0.8686 (at 100°, water at 15.5° = 1). The fatty acids have a sp. gr. 0.823, at the same temperature. The fat melts at 26.5–27°, and solidifies at 1° lower; the fatty acids melt at 27.5°–28.5°, and solidify at 25°. The acid number is 31.095, the saponification number 270.5, the ester number 239.46, the Hühner number (per cent. of fatty acids insoluble in water) 88.88, and the iodine number 17.35. Experiments as to the uses of this fat are in progress.—*Apotheker Zeit.*, 1900, 576.

## The Pharmaceutical Aviary.



### The Formulary Bird.

You never know where this bird will be next. It nests high, preferably under the ridge of the high-level bridge, Newcastle, thus getting a comprehensive view of things. When a new object meets its eye it darts at it like a marten. When they first let it out of the Square aviary, years and years ago, with nice Major tips to its wings, it hunted fresh water algæ and marine rhizopods. Then it migrated to the Tyne, and tried to teach young birds how they should fly. It had a flight with the Magnesia bird's covey once or twice, but is happier on the Industry bird's perch. Feeds on bacteria, animal extracts, suppositories, garden plants, and new preparations that the little formulary birds bring into the aviary.

### Test-tubes.

By F. H. ALCOCK.

THE ordinary test-tubes of the laboratory are various in size, both in capacity and dimensions, and it would be a great boon if some regulation size could be produced, and have them graduated, say, in cubic centimetres. To the teacher, as well as taught, it is often a difficult task to state to each other how much of a particular reagent is required in any particular reaction, and it is more difficult to convey the correct idea of quantity when using ordinary test-tubes. The teacher might say, "Add a 'drop' of such-and-such a reagent," but then the taught has such a curious idea of this quantity, and it varies so greatly, that misunderstandings inevitably arise. He may say "An inch up the tube," or "To where your fingers are," or gauge the amount by fractions, thus— $\frac{1}{3}$  of a tube-full,  $\frac{1}{2}$ , &c., or, appealing to the students' ideas of drachms and the like, he may say, "Put in 2 dr.," but, unfortunately, even the pharmaceutical student of three or more years' experience has a vague notion of this common quantity, and it appears to be very desirable that some more accurate means should be adopted to convey to the mind of a student the quantity necessary to be used in a given reaction. It seems to me that the difficulty would be overcome if such things as graduated test-tubes could be produced cheaply. The graduation need not be mathematically true nor done elaborately—indeed, it could be made an exercise for a beginner in the laboratory to graduate his own, given a burette and a mounted diamond; but time is a great object with our students, and therefore the suggestion is thrown out to makers. Some years ago Mr. Reddrop suggested that reagents should be prepared of such a strength that by using a certain measure of them an aliquot part of the molecular weight was contained therein, and by this means, in conjunction with the graduated test-tube, the student would form a more perfect idea of the science and art of chemistry, and, it is firmly believed, would take a greater interest in his work than now obtains.

## Observations and Reflections.

By XRAYSER.

SCOTCH DISCONTENT with the management of pharmaceutical affairs, I am told in a private letter from beyond the border, is becoming acute. With every desire to make myself useful in fanning the flames of any promising controversy, I confess that I cannot yet arrive at the necessary indignation against the predominant partner. I gather that the real difficulty which is vexing the souls of northern pharmacists is the insufficient supply of apprentices. This is evidently a substantial inconvenience, but it is difficult to trace the condition to the malign influence of Mr. Bremridge, who seems to be looked upon as the arch-plotter against Scotland's pharmaceutical welfare. Three years ago, when the Pharmaceutical Council unrighteously proposed to double the tax on aspirants to its licence in addition to double-barring the entrance-gate, the *C. & D.* foresaw the result which is now coming to pass, and proclaimed it vigorously enough. But I do not recollect that any six hundred, or even any six, Scotchmen materially supported the protest at the time, and Scotch officialdom, indeed, supported the proposal. The harvest has yet to be reaped, but you cannot sow increased cost and difficulties, and gather the same cheap and comfortable provision of apprentices as were obtainable under the old conditions.

\* \* \* \*

MR. REID asks why I would support territorial representation [on the Pharmaceutical Council] for Scotland, and not for Yorkshire? Simply because Scotland is a nation and Yorkshire is not. It has been tacitly agreed that two Scotch representatives shall be members of the Council, and by good feeling and a certain amount of good luck this unformulated arrangement has been maintained. But the Scotch representatives have to depend partly on the favour of English voters for their seats. If I were a Scotch member of the Society, I should prefer rights to favours.

\* \* \* \*

A GREAT, WISE, AND PERSUASIVE PRESIDENT will arise one day—well, they have all been that, but this one will have some peculiar gifts—who will give pharmaceutical home rule to Scotland and perhaps to little Wales, and will then federate the pharmacists of the United Kingdom into one powerful association. There is nothing much more absurd in any part of our legislation than the effect of the two Pharmacy Acts, making it a penal offence for a chemist qualified in Ireland to sell a poison in Great Britain, or for a British pharmacist to compound a prescription on the other side of the Irish Sea. This ridiculous result ought not to be allowed to remain. The anomaly might easily be avoided without a new Act of Parliament; a simple treaty between the two Societies would suffice.

\* \* \* \*

THE NEW PHARMACY BILL.—The advice tendered to the committee which is supposed to be drafting our new charter from *C. & D.* correspondents at Dumfries and Penzance strikes me as singularly sound and sober. It would be foolish to go to Parliament without asking for something substantial; at the same time it would be suicidal to load the Bill with clauses drafted to fulfil all our requirements. I hope the suggestions referred to will be carefully noted by every member of the committee; and I hope, too, if they are adopted, pharmacists residing between those two distant points from whence they come will look at the situation with the same care and all-round consideration as distinguishes the conclusions arrived at by Messrs. Reid and Keen.

THE LATE SIR JOHN BENNET LAWES was the world's creditor, if any man ever was. As the result of his life-long labours on the Rothamsted Farm, checked by the patient experiments in the famous Hertfordshire laboratory under the superintendence of his friend and colleague, Sir Joseph Gilbert, many millions of bushels of corn have been added to the earth's yearly yield. About the end of the eighteenth century Arthur Young estimated the average yield of wheat per acre in England at 23 bushels; it is now close on 30 bushels. No one has done more for the attainment of this result than Sir J. B. Lawes. In the sketch of his career, published in the *Times* of September 1, the curious statement was made that before he was 20 he had mastered the British Pharmacopoeia—a notable feat indeed, as this was thirty years before the first British Pharmacopoeia was published. But it appears that young Lawes's first idea was to utilise his estate for the cultivation and study of medicinal plants. That he acted wisely in turning his attention to foods rather than to medicines there can be little doubt; but what a difference it would have made to pharmacy if he had carried out his first intention!

\* \* \* \*

A NEW "ART OF DISPENSING" had to be produced, and now that it is with us we can all recognise how necessary it had become. There is no topic so fascinating to intelligent pharmacists as the experiences of the dispensing-counter; and the discussion of those experiences is one of the most profitable exercises in which chemists' assistants can engage. The enormous success of the "Art of Dispensing" in the trade was due partly, no doubt, to its own merits, but very largely, I think, to the inclination in so many chemists' minds towards the subject dealt with. The treatise focussed so many points in dispute, touched on so many familiar facts, supported or controverted so many dogmas of the counter, that its perusal was like a long chat with an old friend. But it opened the way to many further discussions, and a good many of these are scattered through the subsequent volumes of THE CHEMIST AND DRUGGIST. To gather them together, to edit them carefully, to incorporate them into the already fairly full manual, and to give a finish to the whole, was a work which it was greatly to be desired, for the sake of the present and the future generation of dispensers, should be undertaken, and it could not have been in better hands than in those of the Editor of this journal. There may be some pharmacies where no copy of the old "Art of Dispensing" has yet found its way. If so, the owners are luckier than they deserve to be, for they can now start with the new edition. In most establishments, however, the treatise has been so well used that it is in a more or less dilapidated condition. The old friend will come back to such pharmacies with stores of new information, with much-improved illustrations, and in a more substantial form. One word of exhortation I should like to add—it is based on experience: If you have an apprentice, you cannot do him a better service than by requiring him to read through this "Art of Dispensing" once every year of his time. He will like it better each time he returns to it. Encourage him to discuss its contents, and when he is leaving you make him a present of a new copy.

CANADIAN TRADE.—The value of the drugs and medicine imported into Canada during the twelve months ended June were:—

1899-1900	1898-9	1897-8
\$1,442,699	\$1,708,851	\$1,762,909

Dyes, chemicals, &c., figured for:—

\$2,264,673	\$2,147,919	\$2,340,459
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# "SANITAS" DISINFECTANTS ARE ABSOLUTELY NON-POISONOUS

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Manufacturers of all kinds of  
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PARIS EXHIBITION, 1900.

(HIGHEST AWARD)

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No. 1 Finest Pure CRUSHED LINSEED	21/ * cwt.	Finest Pure STARCH POWDER	18/ * cwt.
No. 2 Pure CRUSHED LINSEED	20/ * cwt.	No. 1 Finest Light Pure PRECIPITATED CHALK	25/ * cwt.
Best Cleaned LINSEED (TEA)	21/ * cwt.	No. 2 Pure PRECIPITATED CHALK	21/ * cwt.
No. 1 Finest Pure FULLER'S EARTH (Light Colour)	15/ * cwt.	Finest Levigated "WHITE EARTH" (Toilet purposes).	18/ * cwt.
Finest TART ACID	Lowest Cur. Prices	Finest Pure TOILET OATMEAL, SPECIAL	32/ * cwt.
Finest Pure LIQUORICE JUICE	10/ * lb.	Finest ARROWROOT	9/ * lb.

\* CARRIAGE PAID to Railway Stations within 200 miles of London  
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## Editorial Comments.

### A Pharmaceutical Curriculum.

THE discussion on the division of the Minor has raised the subject from the region of the chimerical to the practical, and has brought forth declarations as to its desirability by important personages, the last to favour the proposal being Mr. Carteighe at the general meeting of the Pharmaceutical Society last month. But like Mr. Hills, his immediate successor in the presidential chair, Mr. Carteighe makes division conditional upon a compulsory curriculum. The admission that division is desirable is so much gain; the need for it is that six subjects are too many for the candidate to be examined in at one time, and if division is desirable with a curriculum it should be more desirable without one. We believe the time has passed for treating this subject in the acrimonious spirit which prevailed fifteen to twenty years ago, when advocates far ahead of the bulk of the drug-trade in aspiration wished to impose conditions which would have taken pharmacy beyond the commercial conditions requisite for public service. It is now generally recognised by the best-educated pharmacists that high standard of pharmaceutical culture does not and cannot relieve pharmacists from competitive conditions, because ex-

aminated pharmacists have unexamined traders to compete with. Happily many pharmacists have been able through superior education and personal ability to make a high-class connection which the most outrageous commercialism is not likely to injure. There is a direct relation between the education and services of such men, but this does not obtain in the case of the large majority of examined chemists, who find that the services required of them by the public are of a much humbler nature, and consist of ordinary trading transactions. There is not the slightest suggestion that the latter are not sufficiently well educated for their duties, indeed, it is alleged by some that they have, if anything, more education than is necessary. Obviously, therefore, a curriculum of study added to the present conditions of qualification, and applied to all persons who desire registration, would raise the trade as a whole beyond much of the work now done by retail chemists. Clearly this would be in sympathy with the Pharmacy Act of 1852, but it would controvert the intentions of the 1838 Act, which was to provide the public with a large body of examined retailers, and not with a class of professional pharmacists. As was shown in one of our earlier articles, the Parliamentary Committee which considered the original Pharmacy Bills was perfectly aware that highly-educated pharmacists are desirable; and we have no doubt that if the Legislature is asked to look into the matter again it will endorse its former decision, by agreeing that a compulsory curriculum should apply to those who desire to become pharmaceutical chemists. At the same time it is not at all unlikely that the Legislature, in view of the present outcry for a greater measure of freedom in regard to the sale of poisons, and the steady increase of unregistered retailers in the drug-trade owing to the increased stringency of the qualifying examination, might revert to the 1838 condition—a simple, practical and slightly scientific examination for registration. The Legislature is opposed to restrictions on trading, which technical education and examinations are; but it is in favour of the most thorough education for the professions, and would encourage any efforts of the Pharmaceutical Council to raise the status of professional pharmacists. It may seem strange that the Pharmaceutical Council has never dreamt of imposing a curriculum upon candidates for the Major examination; but it is not too late to try, and as there would be little or no opposition from the trade and probably encouragement from Parliament, a clause to that effect might be introduced into the Pharmacy Bill. Were it enacted it would suffice to demonstrate the utility of the curriculumed pharmacist to the public, and, should it be successful, an attempt might be made in the course of the next generation to abolish the Minor examination in its favour. How does this strike the trade as a solution of the Curriculum controversy?

## Division of the Minor.

### TEACHERS' VIEWS.

In the course of our discussion of this subject we have had the advantage of the opinions of some of the most experienced pharmaceutical teachers in Great Britain. Almost without exception our correspondents are in favour of the division, and some are so convinced of the need of it that they would agree to the compulsory curriculum condition in order to get it. This they do much upon the principle of choosing the less of two evils, and without consideration of the effects of a curriculum upon pharmacy as a trade. On this point one teacher writes:—

A compulsory curriculum would have the effect of multiplying the number of drug-companies and drug-stores a hundredfold, for the rising generation would not spend their time or money over

education or examination, but run attractive "chemist" shops to the great detriment of the craft generally.

We have already dealt with this matter, and merely quote the above as the opinion of a teacher who has twenty years' experience of students of pharmacy. He is supported independently by others who know that a compulsory curriculum, on its face, would mean work for them.

The interest of our correspondence is chiefly in the explanations of the large failures in the Minor examination, and the suggestions for their reduction. First, there is the weakness of the candidates themselves. One teacher writes:—

The failure of the present curriculum (the three years' training) is the primary cause of the lamentable results. Men enter schools with little or no ground-work. They attempt to crush apprenticeship into a three or six months' course with the natural result that they get overloaded. If our apprenticeship system turned out men ready to take advantage of a school training, a great improvement in the pass-list would follow. Consider the time in every school course that has to be devoted to dispensing, pharmacy, and prescription-reading. Relieve us of that and let us devote the time to other subjects, and you will find that the pass-list will compare favourably with most other examinations. Indeed, if we score out the failures in the technical portion of the Minor there is little left to grumble at. We teachers are overwhelmed by having to do the work that our pupils' apprentices should have done. If men were done justice to in their apprenticeship there would be less complaint, but under present conditions the very stones lift up their voices and cry for division.

These views, so forcibly expressed, are not singular. Other teachers have the same complaint to make—viz., that they have to teach most of their students the art of their business as well as its science, and they look for some natural division of these elements. It is pleasure for us to mention that the correspondence reveals no specific complaint against the Boards of Examiners, except that there is a tendency in the examination to overlook the fact that the candidates are persons who have spent the greater part of their pharmaceutical career behind the counter, and that the object of the examination is to test their fitness to be there. One teacher, remarking upon what the examination might be, embodies some objections to the existing method. He writes:—

At present the examination is too unwieldy altogether, too many subjects being compressed into the two days to admit of thoroughly testing a candidate's abilities. This specially applies to the second day's or theoretical examination. The average time allotted to each subject—say, theoretical chemistry—being too short for a nervous man to recover himself and do himself justice. When the division is brought about I think that where possible a written examination should be instituted in place of the present *viva-voce* one. In particular this should be done in theoretical botany, for the questions asked are frequently unsuitable ones, which would never be put in print—I mean questions about which many views are held by different botanists—and unless the candidate gives the theory acceptable to the particular examiner—well, he is wrong. I am not exaggerating, for I know of many cases in my eighteen years' experience which will illustrate this point. Questions on a controversial point would not, I imagine, be set for written answers, nor would the questions go outside the schedule.

As to the nature of the division our correspondents are agreed that two parts should suffice, the first to include theoretical subjects, and the second the practical or technical subjects, which, it may be remembered, is the style of division which the Pharmaceutical Council decided upon. As far as we can judge from the correspondence, not a single writer had in mind that decision, so that we may take their opinions to be the outcome of their experience. We quote from some of the letters:—

I do not think, however, that it would be advisable to simply divide into "theoretical" and "practical"; rather would I suggest a division into "scientific" and "technical." I would suggest that the first professional examination should be a two days' examination the subjects being distributed thus:—

First day.—Qualitative analysis in morning; quantitative analysis in afternoon.

Second day.—Theoretical chemistry and physics; botany.

To thoroughly master these subjects as far as indicated by the present syllabus would require a full six months' course, and the number of lectures which the curriculum would enforce should be spread over that time. This examination might take place, say, every January and July. The second professional or "final" should, I think, treat of subjects more intimately connected with a chemist's business. I should suggest that it be a one-day examination, say—

Morning—Theoretical pharmacy, Latin, and pharmacognosy.

Afternoon—Practical pharmacy and dispensing.

Another remarks:—

The theoretical portion must precede the technical. You could not find a man for selling a poison if you have already certified him fit in dispensing. Chemistry, botany, and physics must take precedence; in fact, to my mind these subjects belong more to the preliminary education of the pharmacist than to the qualifying examination. In the medical examinations the final is not hampered with extraneous matter; it is confined solely to the future life work of the budding medico. If the standard is to remain as at present, I would say chemistry, botany, and physics for the first portion; the remaining subjects for the second, allowing six or twelve months' interval.

A third teacher writes:—

It appears to me to be essential that the most important part of the examination should be left to the last, and it will be admitted that the "practical" subjects are of more importance than those which, for the sake of convenience, may be termed "theoretical." Looked at either from the educational or the administrative point of view it would be unwise to permit candidates to pass a qualifying examination in practical chemistry, pharmacy, and dispensing without first being qualified in the theory of those arts and sciences on which the practice of them is necessarily based. I consider, therefore, that the so-called "theoretical" subjects should be taken at the first professional examination, and that the second professional examination should comprise the "practical" subjects.

The division of the examination would in such a case naturally fall into two classes—namely, those subjects the examination on which can be carried out orally or by means of written papers, and those where a practical examination is necessary. There are certain subjects concerning which there need be no difficulty, such as prescription-reading and posology, chemical theory, and materia medica, which would be in the first professional, and practical chemistry, pharmacy, and dispensing, which would be in the second. The other subjects—namely, botany and the theory of pharmacy—are more doubtful, and it is difficult to say exactly where they should come in. It must be remembered that the actual carrying-out of the examination has to be considered from the point of view of the Council as well as of the candidates, and any scheme must be such as will be feasible from both points of view. I think that it would be quite possible to have a written examination on prescription-reading, chemical theory, organic and inorganic, and probably a similar examination in the theory of pharmacy. For botany and materia medica a mixed examination might be possible, either oral or written, with recognition of sections and specimens, or to a certain extent practical. The simplest method of all would be to arrange that the first professional examination should comprise the work now undertaken on the second day; and the present first day's work should form the second professional. Along with this there could doubtless be an arrangement whereby the written portions of the first professional could be carried out simultaneously, probably also at some half-dozen suitable centres throughout the country, the oral work to be taken on a second day in London or Edinburgh.

These extracts sufficiently indicate the views of our correspondents in regard to the details of the examination. All, we may repeat, are agreed that without division much improved results in the examination cannot be expected. We have examined the Pharmaceutical Society's charter and the 1852 and 1868 Pharmacy Acts, and can find nothing in them to show that the Pharmaceutical Society has not the power to make suitable regulations forthwith. It has no power to impose educational conditions, and it was this that the Privy Council referred to in 1836 when it objected to the curriculum by-laws as being a bar to free access to the examinations. It is argued that division of the examination would prevent free access, but if the regulations were drafted so as to make the divisional system permissive, thus enabling any candidate, if he so desired, to take the whole examination at one time, as in the medical examinations, the objection to

division would be met. There can be no question that an arrangement which would enable students to prove first their fitness in the so-called theoretical subjects, and then in those which involve application of the theory, would be favourable to them, and would tend to improve rather than degrade pharmaceutical education.

## The Cell.

ONCE more British scientists, irrespective of the branches of knowledge which they profess, have gathered together, and at Bradford on Wednesday evening Sir William Turner, President of the British Association, addressed them. It is noteworthy that a distinguished physiologist—Sir Michael Foster—is succeeded in the presidential chair of the Association by the greatest living British anatomist. Sir William Turner's work in the chair of anatomy at the Edinburgh University stands as one of the best records of that famous medical school, and latterly his services to medicine, as the President of the General Medical Council, have brought forth characteristics which few but his intimates were aware of. As President of the British Association, and especially in regard to the semi-popular address which in-



PROFESSOR SIR WILLIAM TURNER, M.B., D.C.L., LL.D., D.Sc., F.R.S.

(President of the General Medical Council and of the British Association.)

augurates its proceedings, it was possible for him to show versatility in other directions. He could, for example, have talked learnedly on whales, many of which he has dissected with shovels, and he has a wealth of material in his own collection to afford an interesting discourse on human skulls. But he avoided these subjects, and had scarcely a word to say about the profession of which he is the nominal head. In his opening remarks, the President made appreciative references to the late Duke of Argyll and Sir J. W. Dawson, who presided over the meetings of 1855 and 1886 respectively. He then went on to impress upon his hearers the value of the "scientific method." By accurate observation, checked in every direction in which error might arise, new facts are discovered and tabulated, and a wider view of nature is obtained. But something more and higher is required—the well-balanced mind to grasp the logical meaning of the facts and tell us their practical application. These are the essentials of the scientific method, and, as Sir William Turner pointed out, they are also of use in everyday life. Had they been applied all round we would have heard less lately of the advantages of muddling through somehow.

The greater part of the address was devoted to a review of our knowledge of the minute structure of animals. It was, in fact, a sort of stocktaking of the work of the century, during which improved methods of observation have enabled us to make enormous strides. As the telescope has been unfolding the heavens to us, so the microscope has been revealing the secrets of the body, and the present century would be noteworthy were it only for the discovery that all living things, plants and animals, are made up of cells. These are a small people, but they are born, grow up, do their work, reproduce their kind, and die. Some of them form a simple speck of life invisible to the unaided eye, while others, acting together in countless millions, make up the larger animals and man himself. The importance of this discovery lies in the fact that it has provided the biologist with visible anatomical units. The study of these is the study of the actual agents through which the functions of the body are discharged in health and disease. Amongst other results, it has dispelled for ever the old mystical ideas of the influences of vapours and spirits, and has rendered possible an immense advance in the progress of practical medicine.

The cell consists of two essential parts—the jelly-like protoplasm, and embedded in it a more or less globular body, rich in phosphorus, called the nucleus. The President traced in some detail the various ideas that have been held in regard to each. So long ago as 1842 John Goodsir advanced the view that the nucleus is the reproductive organ of the cell, and this is now generally accepted. When a cell is about to divide, the nucleus goes through a performance which is one of the most wonderful things in nature. It is known by the comfortable word "Karyokinesis," and consists in a series of kaleidoscopic changes—a bewildering maze of wreaths, loops, spindles, and stars far too complex to be understood of the average man, at least without the aid of numerous diagrams. The end, however, is simple enough—the formation of two nuclei. Each of those takes to itself a portion of the surrounding protoplasm, and the eventual result is that where one cell was there now are two. If the nucleus is the reproductive part of the cell the protoplasm may be described as the working part. In the tiny unicellular organism floating in water it can be seen drawing in particles of food, absorbing the digestible portions and rejecting the indigestible. In the same way in the more complex organisms it is the source of every function, from such a simple thing as the secretion of milk to the action which results in the most subtle thought. Protoplasm has for long been supposed to be simply a jelly-like mass, but lately it has been found that this is not the case. Numerous fibres and granules can be detected in it, and the study of these in health and disease will be an important task for many years, and may be expected to yield results of the utmost value. Sir William Turner next referred to certain special cells, to bacteria, which are probably simply modified cells, and then, with a few words on general morphology, he brought to its close an address which, if it contained nothing very new, was a vigorous and striking presentment of progress and practical results in an important branch of science. Beyond the presentation of a scientific discourse, the President of the British Association has some service to render to the public. He must give, so tradition tells us, something striking that will spur people to prick the film which covers the mysteries of life; and this he gave in the peroration, which was so good that we must give it verbatim:—

We know not [be said] as regards time when the fiat went forth, "Let there be Life, and there was Life." All we can say is that it must have been in the far-distant past, at a period so remote

from the present that the mind fails to grasp the duration of the interval. Prior to its genesis our earth consisted of barren rock and desolate ocean. When matter became endowed with Life, with the capacity of self-maintenance and of resisting external disintegrating forces, the face of nature began to undergo a momentous change. Living organisms multiplied, the land became covered with vegetation, and multitudinous varieties of plants, from the humble fungus and moss to the stately palm and oak, beautified its surface and fitted it to sustain higher kinds of living beings. Animal forms appeared, in the first instance simple in structure, to be followed by others more complex, until the mammalian type was produced. The ocean also became peopled with plant and animal organisms, from the microscopic diatom to the huge leviathan. Plants and animals acted and reacted on each other, on the atmosphere which surrounded them, and on the earth on which they dwelt, the surface of which became modified in character and aspect. At last Man came into existence. His nerve-energy, in addition to regulating the processes in his economy which he possesses in common with animals, was endowed with higher powers. When translated into psychical activity it has enabled him throughout the ages to progress from the condition of a rude savage to an advanced stage of civilisation; to produce works in literature, art, and the moral sciences which have exerted, and must continue to exert, a lasting influence on the development of his higher Being; to make discoveries in physical science; to acquire a knowledge of the structure of the earth, of the ocean in its changing aspects, of the atmosphere and the stellar universe, of the chemical composition and physical properties of matter in its various forms, and to analyse, comprehend, and subdue the forces of nature.

All this, be it noted, has been evolved from the first cell that was placed on the earth's surface. Surely it is well that the nineteenth century has helped man to realise the importance of this unit, and that even now biologists attack it with the assiduity and thoroughness that explorers devote to unknown geographical areas. Maybe that attack will yield us the secret of life.

## The Carbolic Worry.

WE have had an avalanche of newspaper-cuttings this week regarding the scheduling of carbolic-acid preparations. The oilmen's case for regarding this poison as a harmless sort of thing receives support from "James Edmunds, M.D., &c., Medical Officer of Health for St. James's, W.," who, writing to the *Standard*, says, amongst other things:—

If stupid people will drink a bottle of carbolic acid when they think they are stealing a swig of porter, their deaths are not prevented by the fact that they came from a pharmacy and were duly registered in a book instead of, as at present, coming from an oilshop. The remedy here is to put upon every bottle containing such substances a conspicuous red label—"Poison"—and perhaps also to insist upon them being sold in specially shapen bottles. This can be done just as well through the oilshop as through the pharmacy. It would be impossible to draw any line at which to stop. Is every child's box of paints to be sold by a duly-registered member of the Pharmaceutical Society? There is scarcely a box of paints of which the green or yellow block of pigment would not poison. Is every painter and decorator to get his materials at a pharmacy?

Dr. Edmunds has nearly fifty years' experience in the practice of medicine, and has, besides, done a good deal of work in chemical analysis, but he has apparently not yet fathomed the principle which has moved every civilised country in the world to impose special conditions on the sale of certain articles called poison. "H. S. Frampton, J.P. city of Winchester," as one who for years has been engaged in the acid trade, wholesale and retail, tells the *Daily News* that more than 1,000 tons of acid have passed through his hands without accident, because

every person, before being served with a dangerous acid, must give a written order. Therefore, if for the procurement of acids or other poisons, a printed order-form were made compulsory, and it denoted as follows: "No person under 16 to be served. Name, address, and occupation of person asking for poison or acid. Name, address, and occupation of messenger sent for poison or acid. Use for which acid is required," no other legislation would be necessary. If, further, all persons at present dealing in acids, &c., were required to register with the local authority (as under

the Petroleum Act) then the whole trade would be under control, without creating a monopoly.

Another gentleman, who has sold carbolic acid for thirty-five years (how interesting!), tells the *News* that

It is trade monopoly, and nothing else that chemists require. Let me remind you that the Chemists' Society, some ten years ago, endeavoured to get an Act through Parliament, scheduling a host of things, but the "Grand Old Man" got hold of it, rent it in pieces and abolished it, as opposed to his principles of Free Trade.

This is pure balderdash. Our contemporary in Eastcheap, who is light and leading to grocers, has a tilt at "Xrayser's" remark on the grocery wail, but wisely concludes thus:—

We quite understand that our friends the chemists, in getting carbolic scheduled, first of all and mainly sought the public welfare, and had no particular desire to capture from the grocers the "reasonable profits" of this large and legitimate trade which they have so flagrantly neglected. But that capture happens to be a consequence; and the man who gets left naturally feels a little sore.

Poor thing, we sympathise. Even the organ of the oilmen, whose editor stirred up things in the daily newspapers, has turned to our own pages for wisdom, and this week says:—

As far as carbolic acid is concerned it is very unlikely, however strong may be the protest, that the Privy Council will order the acid to be withdrawn from the Schedule. It remains, however, for oilmen to see that pharmacists do not further encroach upon their trade. Viewing the matter from a purely business point of view, the oilman's policy is now to push non-poisonous disinfectants.

This is wise. The Privy Council cannot undo what it has done. Our contemporary, in the circumstances, has done the best thing for its clients—built an advertisement round what we said last week about the power of carbolic acid as a disinfectant. We need not quote what is said in favour of the scheduling, and of the advantage of entrusting the sale to qualified persons. It is overwhelmingly in favour of the course adopted by the Government, and the daily newspapers without exception support it. We are pleased to note that the Home Secretary wrote to local authorities calling their attention to the scheduling. This is, we think, the first time that the Home Secretary has taken this precaution, and at a time when there is considerable disquietude amongst traders on account of the fancied monopoly, the fact that the Home Office has gone out of its way to explain the law cannot fail to do good. Wholesale dealers, who have had no previous experience in handling scheduled poisons, naturally find it difficult to know what they should do, but as long as they label any article coming within the schedule with its name, the word Poison, and their own name and address, they will have fulfilled all that the law requires. Previous experience in regard to the scheduling indicates that a month or two suffices to bring matters into line, and no legitimate interests have been interfered with.

#### THE B.P. AS A STANDARD.

The Chemists' Defence Association has distinctly scored a point in North London by getting the Magistrate there to state a case for the High Court on the broad question as to whether or not the British Pharmacopœia is to be regarded under the Sale of Food and Drugs Acts for the retail sale of articles named therein. That at least appears to have been the intention of the solicitor of the Association when, in cross-examining the analyst, he disputed his authority for regarding the British Pharmacopœia as a standard for camphorated oil, and the Magistrate appeared to sympathise with the objection. Whether the High Court will try the whole question is another matter. It is difficult to see how they can go beyond camphorated oil, the subject of the appeal, but that largely depends upon the manner in which the Magistrate states his case. Should that be favourable

to arguing the broad question, the C.D.A. will have done a good legal service by the appeal.

#### GOOD FOR GIBRALTAR.

Some of the chemists' assistants of Gibraltar met together recently, with the object of discussing the advisability of forming an association. Ten invitations were sent out and eight assistants responded by attending. It was unanimously decided to form an association, to be called "The Calpe Chemists' Association," everyone present promising to support it, with the object of promoting good fellowship and looking after all matters affecting their interests. Mr. John Bruzon was elected President, and Mr. J. C. Lagaros (manager of the Calpe Pharmacy) was appointed Secretary.

#### A SNIPPIT.

It is seldom wise to take too seriously what the snippy papers say. Thus *Answers* includes the patent-medicine trade under "Laws which Help Crime," and we gather that those who deal in such articles are "swindlers by Act of Parliament," for so the heading says. This is all quite in conformity with snippy ways, and the following quotation eminently exhibits the extent of our contemporary's information:—

Whilst many of these proprietary remedies are most useful and excellent, others, sold by unscrupulous people, contain such ingredients as morphine, a fact which renders null and void the laws which regulate the sale of poisons.

This, of course, is absurd. Poisonous proprietary medicines, like all other poisons not the subject of letters-patent, may only be sold under the conditions laid down by the Pharmacy Acts.

#### SCOTCHING "XRAYSER."

If "Xrayser's" references to Scotch affairs had been made in a spirit of perversity, so that attention would be attracted to them, he could not have been more successful; for it is bringing explanations from the other side of the border as to the grounds for the objection to By-law X., section 23. We print some letters this week. The trouble is more a matter of principle than "bawbees," for a sovereign or two a year will cover all the additional fine which is now proposed in the new by-law. Here is the offending by-law in the old and new forms:—

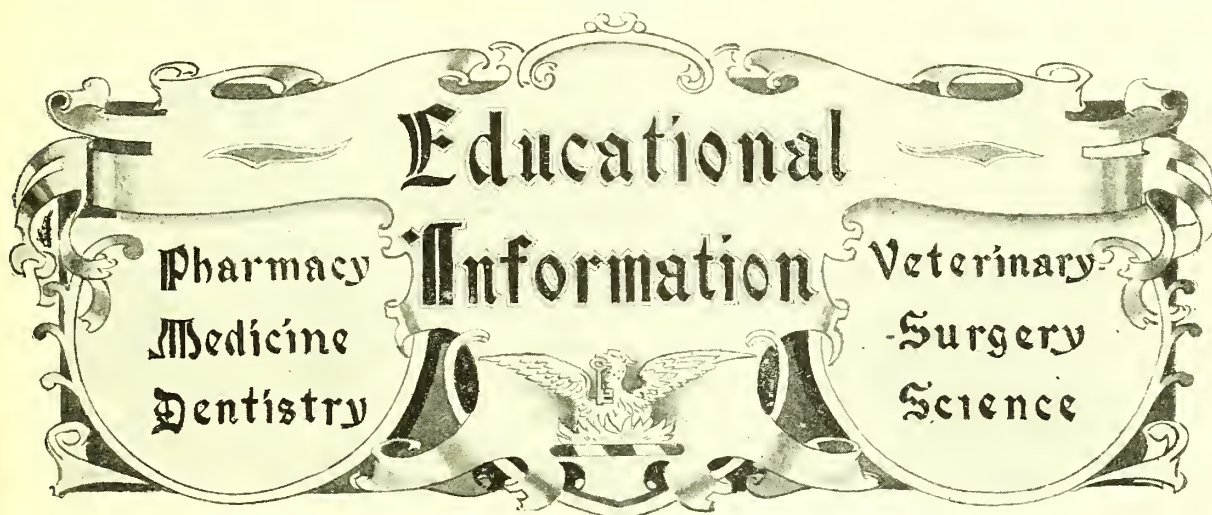
##### Old.

Persons who have given notice of intention to attend an examination, and have failed duly to attend at the time appointed for the same, shall not be entitled to attend on a future occasion unless and until they have given renewed notice of intention to attend an examination, and shall in each case have paid a fee of One Guinea; or, if the persons shall have proved to the satisfaction of the Council or the Board of Examiners (by production of medical certificates or otherwise) that the said failure was occasioned by unavoidable and proper causes, One Shilling.

##### New.

Persons who have given notice of intention to attend an examination, and have failed duly to attend at the time appointed for the commencement of that examination, shall not be entitled to attend on a future occasion unless and until they have given renewed notice of intention to attend an examination, and shall in each case have paid a fee of One Guinea. In cases of absence from any subsequent portion of the same examination the Council shall decide, on the facts of each case, whether the reduced fee of Three Guineas or the reduced fee of One Guinea shall be payable.

The trouble arose with the old section, and is explained far better than we could do it in our news section (page 402). "Xrayser's" sin appears to be that as an outsider he summed up the matter in his own way with a sublime disregard of the difference between a shilling and a guinea or more, and unconcern about Scotch sentiment. He hit the mark exactly when he said the Scotch protest is "rather a symptom of general discontent with Bloomsbury government, than the full expression of that discontent." It would be better to have the whole discontent laid bare now and remedied, so as to have done with it.



## Education and Examinations in Pharmacy.

THE practice of pharmacy in the United Kingdom is governed, in a limited sense, by several Acts of Parliament, one set applying solely to Great Britain, and another to Ireland, while the Isle of Man and the Channel Islands have Acts of their own. The administration of the British and Irish Acts is entrusted to the Pharmaceutical Societies of the respective countries, and the certificates of qualification which they grant are recognised in every part of the British Empire except New South Wales; but the Irish certificate is not accepted in Great Britain, nor the British certificate in Ireland. In this article we give full particulars regarding the regulations in each country, and such other information as may assist students in their desire to qualify.

### Great Britain.

THE REGISTRAR under the Pharmacy Acts, 1852 and 1868, is Mr. Richard Bremridge, Secretary to the Pharmaceutical Society of Great Britain, 16 Bloomsbury Square, London, W.C. To him communications in respect to the examinations should be addressed.

THE REGULATIONS for qualification broadly require each candidate for registration (male or female) to (1) produce evidence of general education in the form of examination certificates covering six school subjects; (2) to have three years' practical experience in translating and dispensing medical prescriptions; (3) to be 21 years of age; and (4) to pass an examination in six pharmaceutical subjects.

THE USUAL COURSE adopted by candidates is to pass a recognised examination in the scholastic subjects before leaving school, or as soon as possible thereafter, then become apprenticed to a registered chemist and druggist for three or four years, during which time it is advisable to read text-books on the subjects of the Qualifying examination, and to attend local classes in scientific subjects, so that when the apprenticeship is complete and the candidate approaches his or her majority a course in a school of pharmacy completes the instruction for the examination.

THE COST OF QUALIFICATION may be put down roughly at 85%, this not including maintenance during apprenticeship, and excluding any premium as such is gradually diminishing—the 50% which is paid on the average being now often returned in whole or part during apprenticeship. The items are:—

Examination-fees	...	...	...	...	£15
Books and microscope	...	...	...	...	10
School-fees during apprenticeship and at college	...	...	...	...	20
Maintenance while at college	...	...	...	...	40
Total	...	...	...	...	£85

This total is modified by circumstances; some may reduce it by 40%, others may require nearer 200%. The cost is largely a question of ability and location.

### REGISTRATION AS APPRENTICES.

The first thing the candidate should do, or should be advised to do, is to pass a recognised examination in English grammar and composition, Latin, a modern foreign language, arithmetic, algebra, and Euclid. The following is a list of the recognised examination certificates:—

**University of Oxford.**—\*Junior or Senior Local examinations. Responsions.

**University of Cambridge.**—\*Junior or Senior Local examinations. Higher Local examinations. Previous examination.

**University of Durham.**—\*Junior or Senior Local examinations. Preliminary examination in Arts.

**University of London.**—Matriculation examination.

**Victoria University.**—\*Entrance examination in Arts of the Faculty of Medicine. \*Preliminary examination.

**University of Edinburgh.**—\*Junior or Senior Local examinations. Preliminary examination for Graduation in Medicine and Surgery. Preliminary examination for Graduation in Arts or Science.

**University of Aberdeen.**—\*Junior or Senior Local examinations. Preliminary examination for Graduation in Medicine or Surgery. Preliminary examination for Graduation in Arts or Science.

**University of Glasgow.**—Preliminary examination for Graduation in Medicine or Surgery. Preliminary examination for Graduation in Arts or Science.

**University of St. Andrews.**—Preliminary examination for Graduation in Medicine or Surgery, or Arts, or Science.

**University of Dublin.**—Public Entrance examinations.

**Royal University of Ireland.**—Matriculation examination.

**University of Wales.**—\*Matriculation examination.

**Scotch Education Department.**—The Honours and First Grade and \*Lower Grade Leaving certificates.

**Intermediate Education Board for Ireland.**—Senior, \*Middle, and \*Junior certificates.

**Central Welsh Board.**—Honours, Senior and Junior certificates.

**Educational Institute of Scotland.**—\*Preliminary Medical examination.

**Oxford and Cambridge Schools' Examination Board.**—Examination for Higher or \*Lower certificates.

**College of Preceptors.**—Examination for a \*First or Second Class certificate.

The certificates are the same as are accepted by the General Medical Council for registration as a medical student, which, however, does not accept the second-class College of Preceptors' certificate and requires, in the case of the certificates marked with an asterisk, that all the selected

subjects be passed at one time. *In all cases the Pharmaceutical Society accepts the certificate if it shows that the subjects have been passed at not more than two examinations.*

THE CONDITIONS OF REGISTRATION are important. In the first place a fee of 2*l.* 2*s.* has to be paid to the Registrar (Mr. Bremridge as above noted), and at the same time the candidate must submit the certificates, which must include the six subjects, and those subjects must have been passed at not more than two examinations of the same examining body, except in the case of the Scotch Universities: in that case the certificates which are accepted by the Universities for Registration as a medical student are accepted by the Pharmaceutical Registrar. Certificates of having passed an examination of a legally constituted examining body not specified in the foregoing list may be submitted for the consideration of the Boards of Examiners and the approval of the Council. Each individual case of this kind is considered on its merits. This enables colonials and foreigners to be registered, if they have certificates covering the six subjects.

HOW TO BE EXAMINED.—The examinations specified in the list are familiar to schoolmasters in Great Britain. In England and Wales elementary and public school pupils are prepared for the local examinations of one or other of the Universities, or for the College of Preceptors' examinations, while in Wales the Central Welsh Board's examinations are becoming as important as are in Scotland the Leaving certificate examinations of the Scotch Education Department. These examinations are held once or twice a year, and boys and girls from 12 years of age go in for them as a matter of regular school routine. It is, therefore, advisable that parents or teachers should arrange that children who may enter pharmacy as a calling should pass in the subjects specified by the Pharmaceutical Society, including French or German. This simplifies subsequent action materially. For those who have not the good fortune to take the necessary certificates before leaving school the simplest course in England and Wales is to pass the College of Preceptors' examination (second class), and in Scotland the Educational Institute of Scotland's Preliminary Medical examination. Subjoined are particulars respecting these.

#### College of Preceptors.

Examinations are held in March, July, September, and December. All communications in respect to them should be addressed to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C. The examinations are held in London and local centres, a list of which is supplied by the Secretary on application. Candidates are required to give six weeks' notice of their intention to present themselves at the class examinations (July and December) and pay a fee of 10*s.* 6*d.* The fee for the Professional Preliminary (March and September) is 2*s.*, and thirty days' notice must be given. At the provincial centres a local fee is also charged. Candidates may confine themselves to the subjects prescribed by the Pharmaceutical Society, viz.:—

ENGLISH.—Candidates may offer either a paper on general English grammar and analysis of sentences, or a paper on a prescribed book, in each case with analysis of simple sentences and easy complex sentences, and grammatical and other questions based on the text. All candidates are required to write a short English essay, and no candidate will be allowed to pass who does not give evidence of his ability to spell correctly.

LATIN.—Candidates are allowed to choose between a paper of "unseen" translation and a paper on a book Cæsar's of "Gallic War" or Virgil's "Æneid." Simple English sentences for translation into Latin are also given; and the papers contain grammatical and other questions arising out of the passages set for translation into English, together with one or more sentences for translation into English from authors not specified.

FRENCH OR GERMAN.—(a) Translation from the foreign language; (b) translation into the foreign language; (c) grammar. In order to pass, candidates must satisfy the examiner in at least two of the three divisions (a), (b), (c). No French or German books are prescribed.

ARITHMETIC.—Including simple questions on the metric system; but excluding cube root, problems on rate and time in interest, compound interest, and stocks.

ALGEBRA.—Including simple equations, fractions, and easy quadratic equations of one unknown quantity.

EUCLID.—Book I, together with either Book II, or Props. 1-19 of Book III, or the subjects treated therein, with riders.

The papers set at previous examinations may be had of Mr. F. Hodgson, 89 Farringdon Street, E.C., price by post 7*d.* each set.

#### Educational Institute of Scotland.

Examinations are held simultaneously in Aberdeen, Dundee,

Dunfries, Edinburgh, and Glasgow in July and September each year. The compulsory subjects are:—

ENGLISH, including dictation, composition, parsing, and derivation, or shorthand as an alternative to derivation.

LATIN.—Grammar; translation into English from Cæsar's "Gallic War," Virgil's "Æneid," and from authors not specified, and Latin composition.

MATHEMATICS, including—(a) Arithmetic: the common rules and vulgar and decimal fractions. (b) Algebra: up to and including simple equations. (c) Geometry: Euclid, Books I-III, with deductions.

One of the following optional subjects:—(a) Greek. (b) French: including grammar, translation of English into French, and French into English. (c) German: including grammar, translation of English into German, and German into English. (d) Any other modern language.

Students can take up all the pharmaceutical subjects, or as many at a time as they please. Defective spelling involves failure. Entry forms to be had from Dr. Alexander Mackay, 40 Princes Street, Edinburgh, and a fee of 1*l.* must be paid on entering.

The exemption referring to the Scotch Universities in the Pharmaceutical regulations is rather a fine distinction. The Universities' regulation is:—

The Preliminary examination shall be conducted in accordance with the provisions of Ordinance No. 13 (regulations as to examinations), and, subject to the provisions of the immediately succeeding section hereof, a candidate shall be obliged to pass in all the required subjects at one or not more than two examinations; provided that he may offer himself for re-examination as often as may be necessary to satisfy this condition.

Now as the Universities accept the Scotch Leaving certificates *pro tanto*, it is possible to pass in the required subjects partly through the Scotch Education Department and partly at one of the Universities, so that the certificates obtained which would qualify for registration as a pharmaceutical apprentice would not be from one examining body. The Honours Leaving certificate of the Scotch Education Department may be passed a subject at a time, but the examination is regarded by experts as the most searching in the United Kingdom. For those actually in pharmacy the examinations conducted by the College of Preceptors and by the Educational Institute of Scotland are the most suitable.

Text-book.—A complete guide to the Preliminary examinations for pharmacy, medicine, dentistry, veterinary surgery, and science, by William Dodds, includes full particulars regarding the more important examinations, books required, how to study, and questions set at the examinations. Published at the offices of THE CHEMIST AND DRUGGIST, price 2*s.* 6*d.*; by post, 2*s.* 9*d.*

The next step in the student's career is to prepare for the

#### QUALIFYING OR MINOR EXAMINATION.

The word "Minor" is misapplied. It is a relic of the times when qualification was optional, and the qualification was obtained by passing a Preliminary examination (for apprentices), a Minor (for assistants), and a Major (for the qualification). Parliament in 1868 considered the second of these sufficient for the purpose, but the Pharmaceutical Society retained the name "Minor." The examination is now much stiffer than the Major was in 1868, and is not Minor in the legal sense. The following is a reprint of the official schedule of this examination.

#### Botany.

The candidate is required to possess a practical knowledge of—

(a) CLASSIFICATION. The main divisions of the vegetable kingdom and their most important characteristics:—Thallophyta, Bryophyta, Pteridophyta, Phanerogamia. The following Subclasses and Natural Orders of the Angiosperms:—Thalamifloræ, Calycifloræ, Corollifloræ, Monochlamydeæ, Petaloideæ, Spadicifloræ, and Glumifloræ; Ranunculaceæ, Crucifereæ, Rosaceæ, Leguminosæ, Umbellifereæ, Compositæ, Solanaceæ, Liliaceæ. The description of flowering plants in technical language. The candidate is also required to recognise any of the plants in the following list:—

#### List of Plants for Recognition.

Aconitum Napellus, Papaver Rhoeas, P. somniferum, Brassica alba, B. nigra, Cochlearia Armoracia, Althæa officinalis, Ruta graveolens, Cytisus Scoparius, Rosa canina, Prunus laurocerasus, Bryonia dioica, Conium maculatum, Foeniculum capillaceum, Eranthe crocata, Sambucus nigra, Valeriana officinalis, Anthemis nobilis, Matricaria Chamomilla, Taraxacum officinale, Menyanthes

trifoliata, *Atropa Belladonna*, *Datura Stramonium*, *Hyoscyamus niger*, *Solanum Dulcamara*, *Digitalis purpurea*, *Lavandula vera*, *Mentha piperita*, *M. viridis*, *M. Pulegium*, *Rosmarinus officinalis*, *Daphne Laureola*, *D. Mezereum*, *Quercus Robur*, *Ulmus campestris*, *Salix alba*, *Colchicum autumnale*, *Avena sativa*, *Hordeum distichon*, *Triticum vulgare*, *Pinus sylvestris*, *Juniperus communis*, *J. Sabina*, *Taxus baccata*, *Aspidium Filix-mas*.

(b) **MORPHOLOGY, INCLUDING ANATOMY.** The external form of plants:—Thallus, stem, root, leaves, inflorescence, flower, fruit. The distinguishing features and common modifications of these structures. Principles of branching and different kinds of branch systems. Phyllotaxis, including veneration. The different kinds of buds and their arrangement on the stem. A general acquaintance with the elements of plant-anatomy; the vegetable cell, tissues—e.g., merismatic, epidermal, fundamental, and vascular. The characteristic anatomical features of roots, stems, and leaves of flowering plants and ferns. The candidate is expected to recognise by means of the microscope, and describe sections illustrating the above plant-structures. The method of increase in thickness of stems and roots, and the characters of primary and secondary tissues. The characters of the flowers. The methods of pollination; self- and cross-fertilisation. The formation of the seed and germination.

(c) **PHYSIOLOGY.** The elementary facts in connection with the physiology of plants, including the nature and source of the food of plants, and the manner in which the raw materials are elaborated. Chlorophyll, its manner of occurrence in the plant; its functions and the conditions under which it discharges them. Reserve materials, their nature, mode of deposition, and the manner in which they are utilised by the plant. The manner in which plants grow, and the conditions necessary for the growth of a plant. The manner in which plants respond to external stimuli—e.g., light, gravity, &c. Sexual and asexual reproduction.

### Chemistry and Physics.

The candidate is expected to possess an elementary knowledge of the following subjects:—

(a) The law of the conservation of energy; the law of gravitation; the balance; specific gravity; atmospheric pressure; pressure of aqueous vapour; the barometer, air-pump, and syphon; the law of Boyle; temperature; thermometer; the law of Charles; the law of gaseous diffusion; V. Meyer's method for determining vapour-densities.

(b) The chief characteristics of chemical action; the distinction of elements and compounds; the laws of chemical combination by weight and volume; the hypothesis of Avogadro; atomic weight and molecular weight; chemical formulæ and nomenclature; valency; the distinction between metals and non-metals.

(c) The general characters of the non-metals; the chief methods of preparation and the typical reactions of the following non-metallic elements and compounds:—Hydrogen, oxygen, ozone, water, hydrogen peroxide; chlorine, bromine and iodine, and their compounds with hydrogen and oxygen; fluorine, hydrofluoric acid; nitrogen, ammonia, the oxides of nitrogen, nitrous acid, nitric acid; sulphur, hydrogen sulphide, sulphurous and sulphuric anhydrides and acids, thiosulphuric acid; phosphorus, phosphine, the oxides and oxy-acids of phosphorus, the chlorides of phosphorus; silicon, silica, fluoride of silicon, silicofluoric acid; boron, boric acid. The usual impurities in such of the above-named substances as are included in the British Pharmacopœia.

(d) The general characters and classification of the metals, and the general methods of forming oxides and salts; the sources, the usual methods of extracting, and the chief properties of, the undermentioned metals, also the modes of preparation, properties, adulterations, and contaminations of their principal compounds:—Potassium, sodium, ammonium, lithium, barium, strontium, calcium, magnesium, zinc, aluminium, iron, chromium, manganese, nickel, cobalt, arsenium, antimony, tin, copper, bismuth, lead, silver, mercury, gold, and platinum.

(e) Carbon, its oxides, cyanogen, hydrocyanic acid, cyanides, ferrocyanides, and ferricyanides, oxalic acid. The chief methods of preparing methane, ethane, ethylene, acetylene, methyl and ethyl alcohols, formic and acetic aldehydes and acids, ethyl acetate, acetamide, olein, glycerol, benzene, phenol, nitro-benzene, aniline, benzoic acid, salicylic acid, hydrate of chloral, chloroform, iodoform, ether; the principal properties, reactions, and mutual relations of these compounds. The candidate will also be expected to possess a general knowledge of the methods of estimating carbon, hydrogen, oxygen, and nitrogen in organic compounds, and of obtaining molecular formulæ.

**Note.**—The candidate is expected to solve simple problems relating to the weight and volume, under different conditions of temperature and pressure, of elements and compounds concerned in chemical reactions.

### Practical Examination.

The candidate is required to determine the specific gravity of liquids and solids, and to be familiar with the general construction

and use of the thermometer and barometer; to recognise by chemical tests the more important non-metallic elements and compounds, as well as the metals and salts indicated in the foregoing list; to detect the chief impurities in those that are included in the British Pharmacopœia; to recognise by their physical properties those which possess well-defined characteristics. To analyse a mixture containing not more than two metals and two acid radicles; to identify by chemical tests the following organic compounds: hydrocyanic acid, cyanides, ferrocyanides, ferricyanides, oxalates, acetates, tartrates, citrates, salicylates, starch, cane-sugar, grape-sugar, salicin, quinine, morphine, strychnine, and their salts; and to detect the impurities in such as are included in the British Pharmacopœia; to perform those volumetric determinations which are described in the British Pharmacopœia. To understand the principles of volumetric analysis, and to prepare, standardise, and use volumetric solutions; to be familiar with the construction and use of the balance, and to have a practical knowledge of the Imperial and metric systems of weights and measures; to quantitatively determine the total alkaloids in cinchona-bark and its official preparations, in the liquid extract of belladonna and its preparations, and in the liquid extract of ipecacuanha; also the strychnine in the extract, liquid extract, and tincture of nuxvomica; the morphine in opium and its extract, liquid extract and tincture; and the resin in tincture of jalap; to have a practical acquaintance with the methods of preparing the more important inorganic substances, including the non-metals and their compounds, and such metallic compounds as are included in the British Pharmacopœia, and also the following organic compounds:—Ether, chloroform, amyl nitrite, ethyl acetate, and hydrocyanic acid, so that he may be able to explain to the examiner the operations involved in their preparation, and, if called upon, to perform the operations or certain stages of them himself.

### Materia Medica.

The candidate is required to recognise specimens of any crude drug mentioned in the British Pharmacopœia or in the annexed list, as well as their principal commercial varieties; to be acquainted with their botanical (or zoological), geographical, and commercial sources, the natural orders to which they belong, as well as the modes of collection and preparation for the market; to indicate the morphological nature of such as are organised, and the mode of formation of such as are unorganised; to correctly describe them, and to point out diagnostic characters either chemical or physical, the latter as far as they can be ascertained by the use of a lens. To name the chief active constituents of official drugs, to know the proportion present in good samples of the more important of them, and to possess a practical knowledge of any pharmacopœial tests or processes of assay applied to crude drugs or their official products.

**Roots.**—*Althæa officinalis*, *Inula Helcnium*, *Alkanna tinctoria*, *Bryonia dioica*.

**Rhizomes, &c.**—*Helleborus niger*, *Sanguinaria canadensis*, *Iris florentina*, *Veratrum album*, *Acorus Calamus*, *Agropyron* (*Triticum*) *repens*, *Veratrum viride*.

**Barks.**—*Berberis vulgaris*, *Erythrophleum guineense*, *Ulmus campestris*, *Ulmus fulva*, *Cinnamomum Cassia*, *Coto*, *Nectandra Rodiei*, *Canella alba*, *Cinchona Calisaya*, *Cinchona lancifolia*, *Pinus*, *Larix*, *Quercus Robur*, *Rhamnus Frangula*.

**Leaves.**—*Aconitum Napellus*, *Piper angustifolium*, *Nicotiana Tabacum*.

**Herbs, &c.**—*Grindelia squarrosa et robusta*, *Marrubium vulgare*, *Solanum Dulcamara*, *Euphorbia pilulifera*, *Convallaria majalis*, *Lactuca virosa*, *Ruta graveolens*, *Juniperus Sabina*.

**Flowers.**—*Calendula officinalis*, *Pyrethrum cinerariæfolium*, &c., *Arnica montana*, *Rosa centifolia*.

**Fruits.**—*Punica Granatum*, *Cuminum Cyminum*, *Laurus nobilis*, *Piper longum*, *Vanilla planifolia*, *Ægle marmelos*.

**Seeds.**—*Theobroma Cacao*, *Paullinia sorbilis* (*Guarana*), *Trigonella Fœvum-græcum*, *Diptyryx odorata*, *Pyrus Cydonia*, *Strychnos amara*, *Hyoscyamus niger*, *Anomum Melegueta*, *Arecia Catechu*, *Hordeum distichon*.

**Hairs or Glands.**—*Mucuna pruriens*, *Mallotus philippinensis*.

**Juices, &c.**—*Black Catechu*, *Lactucarium*, *Cape Aloes*, *Natal Aloes*, *Guttapercha*, *Manna*.

**Gum-Resins.**—*Olibanum*, *Euphorbium*.

**Resins.**—*Sandarac*, *Dragon's Blood*, *Shellac*, *Mastiche*, *Elemi*.

**Cryptogamic Substances.**—*Lycopodium*, *Fucus vesiculosus*, *Chondrus crispus*, *Cetraria islandica*.

**Animal Substances.**—*Mylabris Cichorii*, *Mylabris phalerata*, *Castoreum*.

### Pharmacy.

The candidate is required to possess a general knowledge of the following branches:—

(a) Operations requiring the use of heat. Evaporation, with particular reference to the preparation of extracts and inspissated juices; special characters and modes of preparing the various classes of extracts; influence of surface, temperature, and pressure upon the rate of evaporation; water, steam, and sand baths

distillation, ordinary, fractional, and destructive, distinctive characters and objects of each; official preparations illustrating the various kinds of distillation, apparatus employed, the retort and receiver, still and worm, Liebig's condenser, principles on which they are constructed and used. Sublimation: its objects and applications in pharmacy; official products of sublimation, calcination, and fusion. Desiccation; temperature best suited for drying particular drugs, loss in drying vegetable drugs, forms of drying-ovens, principles on which they are constructed and used.

(b) Disintegration of solid substances; cutting, bruising, and pulverisation; apparatus employed, principles indicating which is to be adopted in particular instances; methods for controlling the degree of comminution, sieves and sifting, trituration, levigation, elutriation, granulation, including methods for producing certain chemicals as fine powders, small crystals, scales, &c. Solution: its nature, solvent power of various menstrua, influences of (a) temperature; (b) state of division of the substance to be dissolved; (c) time; (d) position of the substance in the menstruum; lixiviation, infusion, digestion, and decoction; maceration, percolation, and displacement, principles on which the successful performance of these processes depends; form and materials for percolators and other vessels employed. Filtration, objects and methods, filtering media, means of expediting filtration; dialysis: its application in pharmacy, construction and use of the dialyser. Expression: methods of obtaining the juices from plants; recovery of the residual liquids from tincture-mares, &c.; screw, hydraulic, and other presses. The principles involved in the dispensing of medicines, particularly with reference to the best excipients and methods for forming pill-masses, the preparation and nature of emulsions, the most suitable emulsifying agents, and the best means of suspending insoluble substances in liquids.

The candidate is also required to show a general knowledge of the processes, and understand the principles of the processes, by which the official preparations belonging to the following classes are made:—Colloids, confections, decoctions, dilute acids, extracts (solid and liquid), glycerins, infusions, juices, liniments, lotions, mixtures, ointments, pill-masses, plasters, powders (simple and compound), solutions, spirits, suppositories, syrups, tinctures, vinegars, waters, and wines. A knowledge of the proportion of active ingredients or crude material in official preparations containing aconite, antimony, arsenic, belladonna, Calabar bean, cantharides, chloral hydrate, chloroform, caustic potash and soda, colchicum, digitalis, elaterium, ergot, iodine, iodoform, ipecacuanha, lead, mercury, nux vomica, opium, phosphorus, scammony, stramonium, squill, alkaloids, and alkaloidal salts.

The candidate is required:—

(a) To enumerate the poisons contained in Schedule A of the Pharmacy Act, 1868, and those since added thereto in pursuance of the provision contained in section 2 of that Act, viz.:—

Poisons within Part I. of the schedule.

Poisons within Part II. of the schedule.

(b) To describe minutely the conditions required upon the sale *by retail* of poisons, both in Part I. and Part II. of Schedule A; and to write the proper entry required, according to Schedule F of the Act, for the sale of a poison coming within Part I. of Schedule A.

(c) To state the conditions imposed on the sale of scheduled poisons *by wholesale and for export*; and upon the sale of a scheduled poison when forming an ingredient in a medicine dispensed.

The candidate is also expected to possess a knowledge of the conditions imposed on the sale of arsenic by the Arsenic Act.

### Practical Pharmacy and Dispensing.

The candidate is required to conduct such operations of the British Pharmacopœia, or such parts of them as may be practicable, involved in the processes for preparing colloids, confections, decoctions, dilute acids, extracts (solid and liquid), glycerins, infusions, juices, liniments, lotions, mixtures, ointments, pill-masses, plasters, powders (simple and compound), solutions, spirits, suppositories, syrups, tinctures, vinegars, waters, and wines.

To weigh, measure, and compound medicines; to write the directions in concise language in a *neat and distinct* hand; to finish and properly direct each package. [*In awarding marks in this subject, the time taken by the candidate in doing the work is taken into account.*]

### Prescriptions.

The candidate is required to read, without abbreviation, auto-graph prescriptions; translate them into English; understand the grammatical construction of the Latin; and render a literal as well as an appropriate translation of the directions for use. To detect errors, discover unusual doses, and have a general knowledge of posology. To calculate percentages and other quantities occurring in prescriptions; also to render in good Latin ordinary prescriptions written in English.

Candidates must not take into the examination-rooms or laboratories any books or any notes or memoranda, whether written or in print.

### CONDITIONS OF ENTRY.

APPLICATION FORM to be obtained from the Registrar.

FEE, 10*l.* 10*s.*, and for re-examination, 3*l.* 3*s.* each time.

FORMALITIES.—Each candidate must give notice, on the form to be obtained from the Registrar, and pay the fee to the Registrar on or before the fifteenth day of March, June, September, or December, and he will receive due notice of the date on which he will be required to present himself for examination. When giving notice (for the first time), a candidate must have attained the full age of twenty-one years, and must have been registered as an "Apprentice or Student." He will at the same time be required to produce a Registrar's certificate of birth, and a certified declaration that for three years he has been registered and employed as an apprentice or student, or has otherwise for three years been practically engaged in the translation and dispensing of prescriptions.

### HOW AND WHEN CONDUCTED.

The Pharmaceutical Society annually appoints a Board of Examiners for England and Wales consisting of twelve persons, two of whom are teachers of chemistry and two teachers of botany, and a similar board of eight persons resident in Scotland to act for Scotland. On the latter are a teacher of botany and a teacher of chemistry, to examine in these subjects, the rest being pharmaceutical chemists. The English Board meets at Galen Place, London, W.C., and the Scotch Board at 36 York Place, Edinburgh, in January, April, July, and October each year. Candidates may be examined by either board as they choose.

The examination generally begins about a week after candidates pay their fees. It takes two days, with an interval of one to fourteen days between. The first day is devoted to practical chemistry (three hours), and practical pharmacy and dispensing (three hours). On the second day candidates are orally examined in the scheduled subjects.

Candidates' descriptions of the examination will be found in the *C. & D.* for July 14 and August 18, 1900, as well as in other back numbers. We deal later with the studies for this examination.

Those who pass the Minor examination are registered under the Pharmacy Act 1868, and may keep open shop for the sale of poisons or sell or dispense poisons, and use the title "chemist and druggist," or its equivalent, but not "pharmacist" or "pharmaceutical chemist," the latter titles being reserved for those who pass

### THE MAJOR EXAMINATION.

The examination was instituted by the 1852 Act, and only those who have passed the Minor are admitted to it. The examination is in chemistry, botany, and materia medica, and occupies three days. One day embraces an hour's written paper in materia medica and a two hours' paper in botany, also an hour and a half at section-cutting and drawing in botany, and the same in materia medica. On another a three hours' written paper in chemistry and physics is given; and the third is devoted to six hours of practical chemistry. The practical portion may be taken first. The following is an abstract of the examination schedule.

BOTANY.—Candidates should have a thorough knowledge of morphology, physiology, and histology, as well as classification. They are required to make and mount microscopic preparations illustrating vegetable structure, and to apply micro-chemical tests for plant-tissues.

CHEMISTRY AND PHYSICS.—Candidates may be taken more fully in the Minor subjects, and are expected to have a good knowledge of heat, light, magnetism, electricity, chemical theory, and carbon compounds. The extent of the knowledge is specified in the official syllabus. The practical work in the subject comprises the analysis of mixtures of three metallic salts; estimation of nitrogen in organic compounds; determination of melting and boiling points; gas-analysis by nitrometer; preparation of certain organic substances; recognition of pharmacopœial chemicals; and generally the application of all B.P. chemical tests and assay processes, as well as detection of methyl alcohol.

MATERIA MEDICA.—Candidates must know how to estimate the value of important drugs, and to distinguish commercial varieties, and separate official active principles. Also to have a general acquaintance with the actual constituents of all important drugs, discover adulterations, examine drugs microscopically, and so on.

Fee, 3*l.* 3*s.* and 2*l.* 2*s.* for re-examination.

Accounts of the examination were printed in the *C. & D.*, August 18, 1900.

### Ireland.

There are two legal grades in the drug-trade in Ireland—(1) pharmaceutical chemists, who may sell poisons and compound prescriptions, and (2) chemists and druggists and registered druggists, who may sell poisons, but must not compound prescriptions. The titles "pharmaceutical chemist" and "registered druggist" are conferred after examination by the examiners appointed by the Pharmaceutical Society of Ireland. Mr. A. T. Ferrall, 67 Lower Mount Street, Dublin, is the Secretary and Registrar of the Society, and to him inquiries regarding the examination should be addressed.

The regulations for the title "pharmaceutical chemist" are briefly as follows:—

(1) Candidates must after 16 years of age pass a Preliminary examination, which is conducted by the Society in Dublin in January, April, July, and October (second Tuesdays), fee 2*l.* 2*s.*

(2) Candidates must serve four years as apprentice or assistant with a pharmaceutical chemist in Ireland or Great Britain, or chemist and druggist (Great Britain), or apothecary, or four years with an Irish druggist and two years with a pharmaceutical chemist. (N.B.—Service must be with an individual or individuals.)

(3) Candidates must produce evidence of instruction in botany, chemistry, and materia medica at an approved school or schools.

(4) They must be 21 years of age, and

(5) Pass the Licence examination held in Dublin in January, April, July, and October. Fee, 5*l.* 5*s.*

### SUBJECTS OF THE PRELIMINARY EXAMINATION.

**LATIN.**—To translate into English and parse sentences from a Latin author:—Caesar's "Commentaries," First Book, or Virgil's "Æneid," First Book. Translate an easy English sentence into Latin.

**ENGLISH.**—English grammar, including orthography and parsing. To write on a subject selected by the examiner; and to write from dictation.

**ARITHMETIC.**—The first four rules, simple proportion, vulgar fractions, and decimals. To describe the British weights and measures and the metric system.

**ALGEBRA.**—As far as simple equations, inclusive.

**GEOMETRY.**—Including the first book of Euclid.

**ELEMENTARY THEORETICAL CHEMISTRY.**—Chemical action. Illustrations and examples. Simple and compound substances. Atoms and molecules. Chemical symbols and nomenclature; formulæ and equations. General nature of acids, bases and salts. Combustion, structure and properties of flame. Water, proofs of composition; methods of purification. The air, its constitution; reasons for considering it a mixture and not a compound. The chief physical and chemical characters, with methods of preparation of the following elements and compounds:—Hydrogen, oxygen (and ozone), nitrogen, carbon, chlorine, sulphur, nitrous oxide, nitric oxide, nitric acid, ammonia, carbon dioxide, carbon monoxide, marsh gas, olefiant gas, hydrochloric acid, sulphur dioxide, sulphurous acid, sulphuric acid, sulphuretted hydrogen.

The candidate must pass in one, at least, of the following optional subjects:—

**ELEMENTARY PHYSICS AND MECHANICS.**—Sound, light and heat, as given in Ganot's "Elementary Course of Natural Philosophy"; mechanics of solids and fluids, comprising the elements of statics, dynamics, and hydrostatics.

**THE RUDIMENTS OF BOTANY.**—Oliver's "Lessons in Elementary Botany," Part I.

**FRENCH, GERMAN, or any modern language.**

The Preliminary examination is conducted in writing.

The fee has to be paid in the Bank of Ireland, to the credit of the Society, and candidates must give notice to the Registrar at least fourteen days before the time of the examination. Certificates of having passed any of the examinations accepted by the General Medical Council for registration as a medical student, and the Preliminary examination of the Pharmaceutical Society of Great Britain, are accepted in lieu of the above, provided the examination has been passed at least one year before the candidate presents himself for the licence as a pharmaceutical chemist.

### PHARMACEUTICAL LICENCE EXAMINATION.

THE CURRICULUM comprises a course of practical chemistry of not less than three months' duration and actual work at the

bench for 100 hours in the laboratory of one of the following institutions:—

\*The Pharmaceutical Society of Ireland's School.

\*The Pharmaceutical Society of Great Britain's School.

The Cecilia Street School of Medicine, Dublin.

The City of Dublin Technical Schools.

The City School of Chemistry and Pharmacy (Limited), Chancery Lane, London, W.C.

The Royal College of Science, South Kensington.

The Queen's College, Belfast.

\*The Queen's College, Cork.

\*The Queen's College, Galway.

The Royal College of Science for Ireland, Dublin.

The Royal College of Surgeons in Ireland, Dublin.

\*The Working Men's Institute, Belfast.

Trinity College, Dublin.

Anderson's College Medical School, Glasgow.

\*Mr. S. Templeton's School, Belfast.

A course of botany and materia medica at a recognised school. Schools in above list marked with an asterisk are recognised for these subjects, also the School of Physics, Trinity College, Dublin.

### Subjects of the Examination.

**BOTANY.**—To recognise the principal indigenous plants used in medicine, to refer them to their natural orders, and to give the definitions and the distinctive characters of their several parts.

**MATERIA MEDICA.**—To recognise specimens of the drugs of the Pharmacopœia, to describe their characters and active principles, name the sources from which they are obtained, and the official preparations into which they enter; and to detect adulterations.

**GENERAL AND PHARMACEUTICAL CHEMISTRY.**—The elementary laws of chemistry and physics, including chemical equations. To recognise the chemical substances of the Pharmacopœia; to describe the processes by which they are obtained; qualitative analysis (including the tests of the Pharmacopœia) and volumetric analysis; and to submit to a practical examination in these subjects.

**PRACTICAL PHARMACY.**—To translate Latin prescriptions; to detect dangerous doses; to compound and dispense correctly. To explain the processes of making the non-chemical preparations of the Pharmacopœia, and to recognise them; and to submit to an examination in the Sale of Poisons (Ireland) Act, 33 & 34 Vict., chap. 26, 1870.

The Licence examination is in writing, supplemented by practical work in chemistry and dispensing, and an oral examination. The questions set at both examinations are regularly printed in the Irish Supplement to THE CHEMIST AND DRUGGIST.

Notice of intention to appear at the examination must be given at least fourteen days before the date (second Wednesdays of the specified months), the fee having previously been paid into the Bank of Ireland. Candidates should write to the Registrar for instructions at least three weeks before.

The fee for re-examination in the Preliminary is 10*s.* 6*d.* and for the Licence examination, 1*l.* 11*s.* 6*d.*, six months elapsing between any two entries in each case.

AN ASSISTANTS' EXAMINATION is provided by the Society, similar in scope to that of the Apothecaries' Hall, but not conferring any legal or registration privilege. It is held in Dublin on the second Mondays of January, April, July, and October, also at Belfast when not fewer than twelve persons apply. The fee is 1*l.* 1*s.* Candidates must have passed the Preliminary examination, have been engaged at practical pharmacy for at least four years, and be 21 years of age. The subjects of the examination are prescriptions (reading and translating and detecting unusual doses), practical dispensing, materia medica (recognition of drugs and chemicals), pharmacy (recognition and proportion of active ingredients), and a knowledge of the Sale of Poisons Act (Ireland).

### EXAMINATION FOR REGISTERED DRUGGISTS.

The subjects of this examination are stated in the 1890 Act. The candidate must have served for four years as an apprentice or assistant to a pharmaceutical chemist, licentiate-apothecary, chemist and druggist, or registered druggist. Declarations to this effect have to be made, and a fee of 2*l.* 2*s.* paid into the Bank of Ireland to the credit of the Society's account. If the candidate pass the examination, another 2*l.* 2*s.* is paid for registration. The candidate is examined with respect to his knowledge of English orthography and composition, arithmetic, and the weights and measures of the British Pharmacopœia, the appearance and properties of the various drugs and chemicals in general use, and the Irish Poisons Act. Examinations are held in

Dublin on the second Tuesday of January, April, July, and October, and at any other place from which twelve candidates make application. There are examiners for Cork and Belfast.

### The Adjacent Islands.

GUERNSEY has a pharmacy law which restricts the practice to persons holding British or French certificates. They must be registered in the island.

ISLE OF MAN.—An act to regulate the sale of drugs came into force a month ago, which requires that in future persons who keep open shop in the island for the sale of poisons must be registered under the Pharmacy Act, 1868, or Pharmacy Act (Ireland), provision being made for registering those who have been in business in the island, and assistants for nine years prior to 1899, the latter after December 31, 1901, only being registered on production of the Apothecaries' Assistants' Certificate.

JERSEY requires those starting in business in that island to be registered as chemists and druggists or pharmaceutical chemists in Great Britain, or as pharmaceutical chemists in Ireland, or to hold the Pharmacie diploma of France. The Act covers the sale and dispensing of poisons.

ORKNEY AND SHETLAND are subject to the Pharmacy Acts of Great Britain.

### APOTHECARIES' QUALIFICATIONS.

The Society of Apothecaries of London and the corre-

sponding society in Dublin have the old standing privilege of granting certificates to assistants. These are relics of the days when apothecaries were pharmacists, rather than medical practitioners.

THE ENGLISH CERTIFICATE is recognised by the Local Government Board for Poor-law dispenserships in England and Wales, and by some hospital authorities. It does not carry with it any right to sell poisons or to assume any pharmaceutical title. The examination is held at the Apothecaries' Hall, Blackfriars, London, E.C., on the fourth Wednesday of the months of January, April, July, and October. It is practical and oral only: the practical portion being in the compounding and dispensing of medicines; the oral in chemistry, materia medica, and pharmacy, and the translation of prescriptions. Candidates must give notice of their intention of presenting themselves and pay the fee (3*l.* 3*s.*) seven days previously, and must be 17 years old before the certificate can be granted. The Secretary to the Court of Examiners is Mr. Frank Haydon, L.R.C.P. (Apothecaries' Hall, Blackfriars, E.C.), from whom the full syllabus of the examination may be obtained.

THE IRISH CERTIFICATE is granted to persons over 16 years of age who have two years' experience in practical pharmacy with a registered Irish apothecary or pharmaceutical chemist. The examination is similar to the London one, and is held on the first Friday of each month, except August. Fee, 2*l.* 2*s.*, to be paid to the Secretary of the Apothecaries' Hall, Mary Street, Dublin.

## Pharmaceutical Education.

THE pharmaceutical examinations are now so stringent that it is necessary for the apprentice from the outset of his career to pursue his studies in the scientific subjects. The fact that pharmacy is a business resembling many other shop-trades, so far as actual work is concerned, rather discourages attention to the professional side of the business while shop-work is actually going on; nevertheless it is important that all should bear in mind that attention to the book-subjects from the first is requisite to proper understanding of the business, while any time that can be given to attending evening classes in chemistry, botany, and physics is highly beneficial. Such classes exist in the principal towns, and although they are not, except in a few cases, designed for pharmaceutical students, they give the preliminary training which is so necessary for the special course of study now universally taken before entering for the Minor examination. The time up to that point is valuable, for although studies may be desultory, they are yet of undoubted service.

In the matter of reading, the first thing the apprentice should do is to become familiar with the contents of the British Pharmacopœia. That book is rather dry reading, and it is better to read a commentary upon it. Moreover, it is good to learn something about the action and uses of drugs at the same time that one learns their origin. "Squire" is a little too comprehensive for beginners, but they will find Murrell's "Aids to Materia Medica," published in three parts at 2*s.* 6*d.* each, just the thing. The "Aids" is published by Baillière, Tindal & Cox. Students should get a part at a time, and read the first through before going on to the second. They should not be discouraged although they do not understand everything at first. The "Aids" is written for medical students, and we recommend it chiefly because it is necessary for young druggists to know the nature of the tools they handle. More intimate knowledge of pharmaceutical processes can be acquired at the same time. In this connection we would recommend early acquaintance with "The Art of Dispensing." Compounding is the backbone of pharmacy, and "The Art of Dispensing" deals with all details. It may be supplemented, so far as manufacturing processes are concerned, by such a work as Lucas's "Practical Pharmacy."

It is not advisable for the beginner to overburden himself with literature. Botany, chemistry, and similar subjects may safely be left until one gets a teacher to guide him; then he should get the books on the subject recommended by the teacher. Of course, if one has a strong taste for botany or any subject, he cannot begin too early to cultivate

it, but it is a mistake to neglect the B.P. and the methods of compounding medicine. In elementary chemistry, as now taught, there is much that directly applies to pharmacy. This is well seen in Clowes and Coleman's "Elementary Practical Chemistry and Chemical Analysis" (3rd edition, J. & A. Churchill, 3*s.* 6*d.*), which begins by instructing students how to measure, and describes in a most interesting way the apparatus and operations which are seen in the chemical laboratory. In fact, the book assists students to understand some of the chemical mysteries of the Pharmacopœia, although its object is to teach elementary qualitative analysis, for which purpose it suffices until the Minor is got over.

It is important that students should not forget that they spend their days in the best possible environment for the furtherance of their pharmaceutical knowledge. The contents of drawers and bottles are materia medica. They cannot too soon begin to study the characteristics of the things, using their sight, smell, and taste to acquire knowledge of the distinctions. An ounce of practice is worth pounds of theory in this as in many other things. Students should learn to rely upon their own senses, and to regard books as an aid or check. We give, for the benefit of those who wish to form a library on all the Minor subjects, a fairly full list of

### APPROVED TEXT-BOOKS:—

#### Botany.

- Bower's "Practical Botany." 3*s.* (Macmillan.)
- Green's "Botany." Vol. I. Morphology and Anatomy. 7*s.* 6*d.*
- Vol. II. Classification and Physiology. 10*s.* (Churchill.)
- Lowson's "Botany." 6*s.* 6*d.* (Clive.)
- Scott's "Introduction to Structural Botany." 3*s.* 6*d.* (Black.)
- Scott's "Cryptogamic Botany." 5*s.* 6*d.* (Black.)
- Strasburger's "Botany." 18*s.* (Macmillan.)
- Detmer-Moor's "Plant Physiology." 12*s.* (Sonnenschein.)
- Wishart's "Botanist's Vade-Mecum." 2*s.* (Livingstone.)

#### Chemistry.

- Adie's "Carbon Compounds." 2*s.* 6*d.* (Clive.)
- Attfield's "Chemistry." 15*s.* (Gurney & Jackson.)
- Bernthsen's "Organic Chemistry." 7*s.* 6*d.* (Blackie.)
- Bloxam's "Chemistry." 18*s.* 6*d.* (Churchill.)
- Clowes and Coleman's "Quantitative Analysis." 10*s.* (Churchill.)
- Dobbin's "Arithmetical Exercises in Chemistry." 1*s.* 6*d.* (Thin.)
- Meyer's "Outlines of Theoretical Chemistry." 9*s.* (Longman.)
- Minter's "Analytical Chemistry." 6*s.* 6*d.* (Simpkin.)
- Newth's "Inorganic Chemistry." 6*s.* 6*d.* (Longman.)
- Perkin and Kipping's "Organic Chemistry." 6*s.* 6*d.* (Chambers.)
- Proctor's "Pharmaceutical Testing." 2*s.* 6*d.* (C. & D. Office.)



A CLASS OF THE SOUTH LONDON SCHOOL OF PHARMACY.

Dr. John Muter, founder and principal of the school, is in the centre of the second row, and wears a white waistcoat.



STUDENTS OF THE METROPOLITAN COLLEGE OF PHARMACY.

Ensconced between the lady students is Mr. W. Watson Will, the principal.

- Ramsay's "Elementary Systematic Chemistry." 4s. 6d. (Churchill.)  
 Remsen's "Organic Chemistry." (Macmillan.)  
 Thorpe's "Metals." 5s. 6d. (Collins.)  
 Thorpe's "Non-metals." 5s. 6d. (Collins.)  
 Whitley's "Chemical Calculations." 2s. (Lougman.)

**Dispensing.**

- "The Art of Dispensing." 5s. 6d. (C. & D. Office.)

**Materia Medica.**

- Flickiger and Hanbury's "Pharmacographia." 21s. (Macmillan.)  
 Greenish's "Materia Medica." 15s. (Churchill.)  
 Maisch's "Materia Medica." 10s. 6d. (Kimpton.)  
 Scoresby-Jackson's "Note-book." 12s. 6d. (James Thin.)  
 Southall's "Materia Medica." 7s. 6d. (Churchill.)  
 Watson Will's "Materia Medica Synopsis." 2s. 6d. (Metropolitan College.)

**Microscopy.**

- Griffith's "Elementary Text-book of the Microscope." 7s. 6d. (Gurney & Jackson.)  
 Hogg's "Microscope." 10s. 6d. (Routledge.)  
 Squire's "Methods and Formulæ." 3s. 6d. (Churchill.)

**Pharmacy.**

- British Pharmacopœia, 1898." 10s. 6d. (Spottiswoode.)  
 Gadd's "Synopsis of the B.P." 1s. (Baillière.)  
 Coblenz's "Handbook of Pharmacy." 18s. (Blakiston.)  
 Lucas's "Practical Pharmacy." 12s. 6d. (Churchill.)  
 Remington's "Pharmacy." 21s. (Burroughs, Wellcome & Co.)  
 Squire's "Companion to the B.P." 12s. 6d. (Churchill.)

**Physics.**

- Aldou's "Physics." 7s. 6d. (Macmillan.)  
 Deschanel's "Physics." 18s. (Blackie.)  
 Everett's "Physics." 3s. 6d. (Blackie.)  
 Ganot's "Physics." 15s. (Longman.)  
 Glazebrook's "Light and Heat." 5s. (Cambridge Press.)  
 "Electricity and Magnetism." 3s. 6d. (Clive.)

**Poison Laws.**

- "Pharmacy and Poison Laws of the United Kingdom." 2s. 6d. (C. & D. Office.)

**Prescriptions.**

- Iuce's "Latin Grammar of Pharmacy." 5s. (Baillière.)  
 Pereira's "Selecta à Prescriptis." 5s. (Churchill.)  
 Watson Will's "Prescription Reading." 12s. 6d. (Metropolitan College.)

We now proceed to describe the available courses of study in the United Kingdom which are suited for pharmaceutical students. Some of the classes are such as apprentices and assistants can avail themselves of during their business career, whilst others require the student's whole time to be devoted to the course. In making a selection of a school the student is advised to write for the prospectuses of such as appear suited to his wants both as regards locality and fees. Care should be taken to ascertain what extra fees, if any, are to be paid, and it should be borne in mind that it is not necessary to reside close to the college at which the student is studying. Some towns possess quick and cheap means of locomotion, which give the student considerable choice of domicile. The principals of the various schools are at all times pleased to give students information on points not touched on in their prospectuses.

The Pharmaceutical Society recommends all who enter for the Minor examination to attend a course of at least sixty lectures in chemistry, forty-five in botany, and twenty-five in materia medica, with eighteen hours' work per week in practical chemistry for a period of six months.

**ENGLAND.****THE SCHOOL OF PHARMACY,**

17 Bloomsbury Square, London, W.C.

Staff: BOTANY—Professor J. Reynolds Green, F.R.S.; Demonstrator, Mr. E. C. Horrell. CHEMISTRY—Professor J. Norman Collie, F.R.S.; Assistant Lecturer, Dr. A. Lapworth. PHARMACEUTICS (MATERIA MEDICA and PHARMACY)—Professor Henry G. Greenish; Demonstrator, Mr. T. E. Wallis.

The session commences on Monday, October 1, 1900, when the prizes of the last session will be distributed. Two courses of study are given—an elementary and an advanced course. The elementary course includes subjects required

for the Minor, and extends to the end of June, 1901. The advanced course extends from October to the end of March. Students may, however, enter the school at any time and for any subject or part of the course, but it is advantageous to enter at the commencement of the course in October. The fee for the elementary course is 32l. 11s. or 30l., and for the advanced course 18l. 18s. or 18l. The lectures on the various subjects can be taken separately. Professor Reynolds Green is the Dean of the School, but applications for prospectuses and admission to the school should be made to the Secretary of the Pharmaceutical Society.

**SOUTH LONDON SCHOOL OF PHARMACY (LIMITED),**  
 325 Kennington Road, London, S.E.

Staff: Dr. John Muter, F.R.S.E.; Mr. J. Thomas, B.Sc.; Mr. W. T. Mawer, F.C.S.; Mr. A. H. M. Muter, A.I.C.; and Mr. F. Armstrong.

The session at this school lasts from the end of September until the middle of July. Fresh courses of lectures for Minor and Major begin in September, January, and April. The fee for the Minor, theoretical, and tutorial classes is 5l. 5s. In the practical department a fee of 3l. 3s. per month is charged. Compounding fees for the Minor are, for the autumn term, 12l. 12s.; for the winter session, 21l.; for either the spring or summer terms, 10l. 10s.; students for the full academical year covering both Minor and Major work, 28l. 7s. Major students who have passed the Minor from this school are allowed 20 per cent. off the Major fees, which are otherwise the same as for the Minor.

**WESTMINSTER COLLEGE OF CHEMISTRY AND PHARMACY**  
 (LIMITED),

Trinity Square, Borough, London, S.E.

Principal, Mr. G. S. V. Wills; Secretary, Mr. E. Walden.

There are during the school year three courses for the Minor, beginning in September, January, and April, and three for the Major, beginning in September, January, and April. The fee for a Minor course is 8l. 8s.; two courses, 12l. 12s.; until qualified, 15l. 15s. Major course, 6l. 6s.; until qualified, 10l. 10s. Apothecaries' Hall, one course, 5l. 5s.; two courses, 8l. 8s.; until qualified, 10l. 10s. Evening lectures and practical work are also given, the fee for a three-months' course of each subject being 1l. 1s. to 2l. 2s., according to the number of evenings a week devoted to work. Postal systems are arranged for all examinations. To meet the increased fees for the Minor now demanded by the Pharmaceutical Society a system has been introduced at this school of paying, on certain conditions, half the fee.

**METROPOLITAN COLLEGE OF PHARMACY,**

160 and 162 Kennington Park Road, London, S.E.

Principal, Mr. W. Watson Will, F.L.S., F.C.S.; Demonstrators, Mr. Harry Lucas and Mr. F. F. De Morgan, F.C.S.; Secretary, Mr. Walter S. Carver.

The sessions are as follows:—Winter, September 1 to December 31; spring, January 1 to April 14; summer, April 14 to July 23. Special tutorial course, September 1 to October 12. The inclusive fees for one Minor session is 10l. 10s.; two, 19l. 19s.; three, 28l. 10s.; for the special tutorial course, 6l. 6s. Students may also enter for half a term (6l. 6s.), or by the week (1l. 1s.). The fee for the Major session is 8l. 8s. Evening classes are arranged for the convenience of students who are engaged during the day. An illustrated description of this school was given in the C. & D., July 21, 1900, page 89.

**IMPERIAL COLLEGE OF CHEMISTRY,**

49 and 51 Imperial Buildings, Ludgate Circus, London, E.C.

Principal, Mr. Frederick Davis.

Courses of study begin in January, April, July, and October. For the Minor examination students are advised to attend the school for six months, but the work may be covered in three months. The fee is 10l. 10s. for the three months' course, 15l. 15s. for six months, and students may enter for single subjects at fees from 1l. 1s. upwards. Evening classes are held on the first four nights of the week. Courses of instruction are organised to meet the requirements



STUDENTS OF THE LONDON COLLEGE OF CHEMISTRY, PHARMACY, AND BOTANY.  
Mr. Henry Wootton, the principal, sits in the centre of the second row, in his university gown.



↑  
A PHARMACEUTICAL CLASS OF THE EDINBURGH ROYAL DISPENSARY.  
The arrow indicates where Mr. William Duncan, the principal, is sitting.

of the Apothecaries' Hall, the Institute of Chemistry, and the Conjoint Board of the Royal Colleges of Physicians and Surgeons.

LONDON COLLEGE OF CHEMISTRY, PHARMACY, AND BOTANY,

323 Clapham Road London, S.W.

Staff: Mr. Henry Wootton, B.Sc. Lond. (Principal); Mr. C. E. Franklin Vallet, Ph.C., and Mr. Oswald E. Bennett, Ph.C.

The terms commence on September 5 and at the beginning of January and April. In addition to the regular lectures and practical work, special tutorial classes are held daily at 4 P.M., except Saturday. The fees for the Minor course per term are 9*l.* 19*s.* 6*d.*; Major, 6*l.* 16*s.* 6*d.*. The inclusive fee for two Minor terms is 17*l.* 17*s.* Evening classes are held, the fees for which vary from 1*l.* 1*s.* to 2*l.* 7*s.* 6*d.*, according to the number of classes attended each week.

THE CENTRAL SCHOOL OF PHARMACY,

2 Charterhouse Street, E.C.

Principal, Mr. C. E. Sage, Ph.C., F.C.S., assisted by Mr. McKenzie (botany) and Mr. Verdier (pharmacy).

Day classes are held for the Minor and Major, the course commencing after each Minor examination. Evening classes, which cover the Minor syllabus, are held on Tuesdays, Thursdays, and Fridays. On Wednesday evenings advanced and elementary classes are conducted for Major students and junior assistants respectively. The fee for a full-day course is 18*l.* 18*s.*; for the three-months' course, 10*l.* 10*s.* The evening-class fees are at the rate of 4*l.* 4*s.* for a three-months' course.

LONDON COLLEGE OF PHARMACY AND CHEMISTRY FOR LADIES,

5 and 7 Westbourne Park Road, Porchester Square, W.

Students are prepared either personally or by correspondence for the Minor and Major and for the Apothecaries' Assistants' examination, the last being a speciality of the college. The fee for preparation for the Minor is 10*l.* 10*s.*; Major, 8*l.* 8*s.*; Apothecaries' Hall (instruction for six months) 5*l.* 5*s.*; dispensing or separate subjects, 2*l.* 2*s.* Evening classes are held at the same fees as those for the day course. Medical bookkeeping is taught for a fee of 10*s.* 6*d.*, and there is an employment agency for lady dispensers carried on at the college. Communications should be addressed to the Secretary.

SCHOOL OF PHARMACY FOR LADIES,

33 Store Street, Bedford Square, W.C.

Principal, Miss L. de Lassasie.

Students are taught dispensing and coached for examinations. The next term begins in October, but students may begin at any time. A special class is also being started for instructing nurses in dispensing.

BRIXTON SCHOOL OF PHARMACY,

12 Knowle Road, Brixton, London.

Principal, Dr. A. B. Griffiths, F.R.S.E.

Classes are held for the Minor, Major, and Apothecaries' Hall examinations. There is a post-graduate course in research-work and commercial analysis.

CITY SCHOOL OF CHEMISTRY AND PHARMACY,

27 Chancery Lane, London, W.C.

The courses for the Minor and Major start in January and July, the fees for the whole course of six months being 12*l.* 12*s.* Evening classes are held.

BARROW-IN-FURNESS.

At the School of Science and Art evening classes are arranged in theoretical and practical chemistry and botany which are suited for pharmaceutical students. The session

begins on September 10, and particulars can be obtained from Mr. C. F. Preston, Town Clerk.

BIRMINGHAM.

Mr. F. H. ALCOCK, F.I.C., the Analytical Laboratory, Temple Chambers, Broad Street Corner, Birmingham, gives private tuition in all pharmaceutical subjects.

THE CENTRAL SCHOOL OF PHARMACY, 90 New Street.—Mr. Stokes Dewson has day and evening classes for the Major and Minor examinations. The new courses begin this week.

MUNICIPAL TECHNICAL SCHOOL, Suffolk Street.—There are special courses of chemistry on Wednesday afternoons for the Minor examination. The courses extend over two sessions, and consist in each course of about an hour's lecture and two hours' practical work, from 2.30 to 5.30 P.M. weekly. The fee for either lecture course is 2*s.* 6*d.*; for the combined course, 5*s.* There are also botany classes suited for pharmaceutical students, and a materia-medica cabinet has been provided by Messrs. Southall Brothers & Barclay for the use of students.

BRADFORD MUNICIPAL TECHNICAL COLLEGE.

Head of Chemistry Department, Mr. W. M. Gardner Lecturers in Chemistry, Dr. W. F. Sutherst and Mr. S. F. Stell. Lecturer in Botany, Biology, Materia Medica, and Pharmacy, Mr. W. West, F.L.S.

The general pharmaceutical course, which includes chemistry and physics (lectures and laboratory), botany (lectures and laboratory), biology (lectures and laboratory), materia medica and pharmacy, and dispensing (lectures and practical), extends over two years, and is arranged so that chemists' apprentices can completely prepare for the Minor and Major examinations during the course of their ordinary work, as the classes are held partly in the afternoon and partly in the evening.

BRIGHTON.

A pharmaceutical course for Minor students has been arranged at the Municipal School of Science and Technology, Richmond Terrace. The fee for the complete course, which begins on September 24, is 2*l.* 2*s.* The classes are held in the morning and afternoon, and can generally be taken by assistants and apprentices whilst engaged in business.

BRISTOL UNIVERSITY COLLEGE.

The chemistry classes at nominal fees are useful for pharmaceutical students, and practical chemistry practice can be had in the chemical laboratory at fees which depend on the number of evenings a week devoted to the subject.

CAMBRIDGE.

The Cambridge Pharmaceutical Association, through their Secretary (Mr. B. S. Campkin, Mill Road), will furnish particulars of classes in botany and chemistry suitable for pharmaceutical students. The classes are held at the Technical Institute, in connection with the Science and Art Department of South Kensington, and have been recently reorganised.

LANCASTER.

Municipal Technical School, The Storey Institute.

Principal, Dr. Schloesser, Ph.D., M.Sc. Chemistry and Physics, Lectures on Monday and Tuesday evenings by the Principal. Laboratory work, in both chemistry and physics, on Monday, Wednesday, and Friday evenings. Botany, Lecturer Mr. W. Wyatt (pharmaceutical chemist). The course includes fourteen lectures on morphology and the reproductive processes, four lectures on physiology (with experiments), and ten lectures on systematic botany. Practical lessons on the living plant, with technical descriptions, are given with each lecture. The scope of the work covers the requirements of the Minor examination.

LEEDS.

The Yorkshire College.

There are courses in chemistry, physics, and botany at this college suitable for pharmacy students. Mr. J. H. Gough, Ph.C., is the demonstrator in practical pharmacy.



STUDENTS OF THE MANCHESTER COLLEGE OF PHARMACY.

The principal (Mr. Charles Turner) is sitting behind the centre man of the front triumvirate.



STUDENTS OF THE LIVERPOOL SCHOOL OF PHARMACY.

Mr. R. C. Cowley, the principal, is fourth from the left of the front standing row.

*College of Pharmacy, Springfield Place.*

Principal, Mr. F. Pilkington Sargeant, F.C.S.

There are four Minor courses at this college during the year, beginning early in January, April, July, and October. Each course comprises  $5\frac{1}{2}$  days' work per week for six months, during which time the subjects are covered four times—twice in detail and twice in recapitulation. The fee for three months' full-time class, Minor or Major, is 8*l.* 8*s.*; for six months, 14*l.* For the evening and weekly classes the fee is 4*l.* 4*s.* for a six-months' course. Special tuition is given for the examinations conducted by colonial Pharmacy Boards, the Apothecaries' Hall, and various universities.

*Leeds Technical School.*

There are evening courses of study at this school in chemistry, physics, and botany during the winter. The classes open on Monday, September 17. A course of pharmaceutical chemistry has been arranged, of which full particulars can be obtained from Mr. Tait, Secretary, Cookridge Street. The Leeds Chemists' Association occasionally arrange a materia-medica course, and have an excellent cabinet of specimens.

## LIVERPOOL.

*School of Pharmacy, 6 Sandon Terrace, Upper Duke Street.*

Principal, Mr. R. C. Cowley.

The full-time course of study for the Minor begins on September 10 and continues till Christmas. Fee, 10*l.* 10*s.* The January and April courses continue till the April and July examinations; 9*l.* 9*s.* The fee for two full courses, which is recommended by the principal, is 16*l.* 16*s.* Major full-time classes are held from 9 to 5 daily, the fee for a course of three months being 9*l.* 9*s.* There are also part-time classes held on Wednesdays from 3 to 10 P.M., the session beginning in September. Classes are also held on Fridays for the convenience of those who cannot get away from business before 6 P.M., and a class on Tuesdays for advanced students.

*University College School of Pharmacy.*

Chemistry, Professor J. C. Brown, D.Sc. Physics, Professor Oliver J. Lodge, D.Sc. Botany, Professor R. J. H. Gibson, M.A. Materia Medica, Professor W. Carter, LL.B. Lecturer on Pharmacy, Mr. Prosper H. Marsden, F.C.S.

Courses of study for the Minor begin on October 10, 1900, that for the Major in May, 1901. The composition-fee for each course is 17*l.* The course may be taken in a single year or spread over a longer period. The Manchester Pharmaceutical Scholarship may be held at this College. Applications for admission should be made to the Registrar.

## MANCHESTER.

*The Owens College Pharmaceutical Department.*

Principal, Mr. A. Hopkinson, Q.C., M.A. Dean Professor, A. H. Young, M.B. Physics, Professor A. Schuster, Ph.D., F.R.S. Chemistry, Professor H. B. Dixon, F.R.S., and Professor W. H. Perkin, F.R.S. Materia Medica and Pharmacy, Dr. R. B. Wild and Mr. Jas. Grier, Ph.C. Lecturer in Pharmacognosy, Mr. W. Kirkby. Pharmaceutical Chemistry, Mr. Jas. Grier. Botany, Professor Weiss.

The course for the Minor examination extends over a winter and a summer session, and the course for the Major over one winter session. Students who desire to obtain the B.Sc., and who have passed the Victoria Preliminary, may so arrange their courses for the Minor and Major as to include the other subjects required for the Intermediate, which may be taken at the end of the first or second year. The Dean of the School enrolls students for the winter session from September 27 to October 15. The course for the Minor extends over nine months, fee 19*l.*; that for the Major over six months, fee 15*l.* 15*s.* An entrance exhibition of 10*l.* and a prize of 5*l.* will be offered for competition at the end of the first year. The Manchester Pharmaceutical Scholarship is tenable at this College.

*College of Pharmacy, 225A and 227A Oxford Street, Manchester.*

Director, Mr. Chas. Turner, F.C.S.

The Minor courses of instruction begin either in January or October for the July and April examinations; fee, 14*l.* 14*s.* Also from August 13 to the January examination; fee, 11*l.* 11*s.* The final course for each examination begins about six weeks before the published date of that examination. The fee for the Major course (three months) is 6*l.* 6*s.* Afternoon classes meet on Tuesdays from 2 to 10; fee, August 13 to Christmas 3*l.* 3*s.*, January to July 4*l.* 4*s.* Evening classes at the same fees meet on Mondays, Wednesdays, and Fridays. There are special evening classes for the Apothecaries' Hall examination intended for ladies, the fee for a six months' course being 4*l.* 4*s.*

*Northern College of Pharmacy, 100 and 102 Burlington Street, Manchester.*

Principals, Mr. George Clayton, F.C.S., and Mr. F. Lawson, B.Sc. Lond.

The day courses for the Minor begin in September, October, January, and April. For the September-January course the fee is 10*l.* 10*s.*; for the other two, 9*l.* 9*s.* each. Afternoon and evening courses begin in September and January. The fee for the September-December course is 2*l.* 10*s.* Day and evening classes are also conducted for the Major examination, the fee for the September-January day-course being 6*l.* 6*s.*

## NEWCASTLE-ON-TYNE.

*North of England School of Chemistry and Pharmacy, 55 Northumberland Street.*

Principal, Mr. Frank R. Dudderidge, F.C.S.

There are four sets of Minor classes in operation at this school.—Full-time day class, fee 8*l.* 8*s.* per term of twelve weeks; evening classes meeting three times a week, fee 3*l.* 3*s.*; Wednesday afternoon classes, fee 3*l.* 3*s.*; and a special weekly class for junior assistants and apprentices. Classes are also held for the Major examination, at fees for the day course of 7*l.* 7*s.*, evening course 3*l.* 3*s.*; and arrangements are made to prepare students for any of the Preliminary examinations accepted by the Pharmaceutical Society, at a fee of 2*l.* 2*s.* per term.

*The Durham College of Science.*

Courses of lectures on chemistry, physics, and botany can be taken by pharmaceutical students at this college.

## NOTTINGHAM.

*University College.*

Pharmaceutical courses for the Minor and Major have been arranged. The classes in elementary inorganic chemistry begin September 24; advanced inorganic, elementary organic, September 28; practical chemistry, Thursday afternoons from 2 to 5; physics, May 8; botany, September 25; practical dispensing, September 26; and materia medica, Wednesday evenings. The fees range from 5*s.* to 15*s.* the course. Professor F. S. Kipping, F.R.S., is the head of the chemistry department.

*The School of Pharmacy, 177 Alfreton Road.*

Principal, Mr. A. R. Bennet, Ph.C.

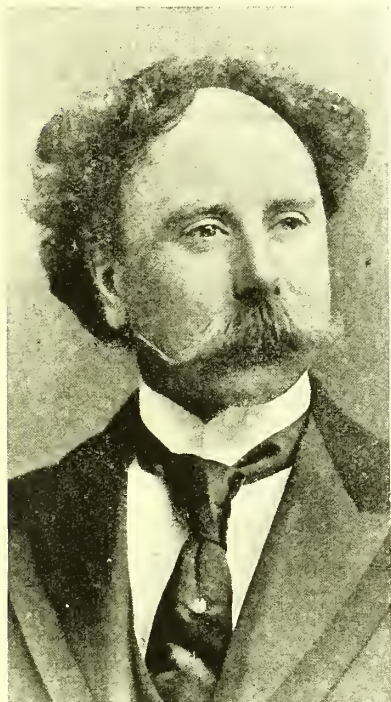
Students are prepared for the Minor examination. Full-time day-classes are held, the fee for which is 1*l.* 1*s.* a week, or 15*l.* 15*s.* for two terms. Evening classes take place from 8 30 to 10 30 P.M. on Monday, Thursday, and Friday, and an afternoon-class on Thursdays. The fee is 1*l.* 1*s.* per term. one night a week.

## PLYMOUTH.

*Municipal Science, &c., Schools.*

Lecturer in Chemistry, Dr. J. R. Thackrah, M.A.

There is a course of organic chemistry on Thursday afternoons adapted for Minor students. The fee is 1*l.* 1*s.* Courses of botany, pharmacy, and practical chemistry have also been arranged.



MR. F. DAVIS  
(Principal Imperial College of Pharmacy).



MR. F. LAWSON, B.Sc.  
(Northern College of Pharmacy).



SENIOR CLASS OF THE EDINBURGH CENTRAL SCHOOL OF PHARMACY.  
Mr. William B. Cowie, the principal, is fourth from the right in the front row.

## READING COLLEGE SCHOOL OF PHARMACY.

Director of pharmaceutical studies, Dr. C. M. Luxmoore, F.I.C.  
Lecturers: physics, Mr. G. J. Burch, F.R.S.; chemistry, Dr. C. M. Luxmoore; botany, Mr. Percy Groom, M.A.; pharmacognosy, Mr. B. J. Austin, F.L.S.; pharmacy and dispensing, Dr. J. L. E. Drugman.

The subjects of study are those comprised in the syllabuses of the Minor and Major examinations. A complete course for either examination extends over three terms, the composition-fee for which is 18*l*. Students who are well forward may enter for two terms. Students can compound for tuition-fees and board and lodging for the session for 52*l*. Particulars can be had by addressing the Registrar, Mr. F. H. Wright.

## SHEFFIELD.

*College of Pharmacy, 113 Princess Buildings, The Moor.*

Principal, Mr. J. W. J. Turner, Ph.C.

Day classes are held, commencing on the first Monday in October, January, April, and July. The fees for a full Major course are 7*l*.; minor, 8*l*. 8*s*.; for the short course, Major, 4*l*. 10*s*.; minor, 5*l*. Evening classes are held on Thursdays, the fee being 1*l*. 12*s*. 6*d*. Dr. Greaves is to deliver a course of lectures in botany and physics in the coming term.

*University College.*

Classes in the three-years' course for Minor students are held on Wednesday evenings (materia medica on Fridays), the session beginning on October 10. Mr. John Austen, Ph.C., is the lecturer in materia medica. The fees are, materia medica, 10*s*. 6*d*.; chemistry, two years, 30*s*. each; practical chemistry, 30*s*.; botany, two years, each 30*s*.

## SOUTHAMPTON.

The Hartley College provides day and evening instruction in chemistry and botany. The day classes in chemistry are held from 12 to 1 P.M., botany from 3.30 to 4.30. The fees for day classes are 2*l*. 2*s*. per session for two or three hours per week, evening classes 10*s*. for one or two subjects. The next term begins on September 27.

## WOLVERHAMPTON.

*Free Library, Science, and Technical School.*

Teachers:—Inorganic and Organic Chemistry, Mr. W. Whitehouse, F.C.S. Physics, Mr. H. J. Tench. Botany, Mr. Sidney Phillips, Ph.C. Latin, Mr. F. G. Griffiths, M.P.S.

Day classes are held in chemistry and physics, and evening classes in chemistry, physics, and botany. Special arrangements are made for the requirements of Pharmaceutical students. The session commences Monday, September 17. For other particulars and programme, Mr. J. Elliot, the Secretary, should be addressed.

WALES (*See SCIENCE*).

## SCOTLAND.

ROBERT GORDON'S COLLEGE, ABERDEEN.

*School of Pharmacy.*

Head Teacher, Mr. H. E. Ellis, Ph.C.

The pharmaceutical department of this college embraces courses of study for the Minor and Major examinations. The term began on August 28. The fee per term is 7*l*. 7*s*. Evening classes are also held, for which the fee is 3*l*. 3*s*., the next course beginning on October 1. Single subjects may be taken if desired, at proportional fees. The Aberdeen Pharmaceutical Association offer prizes to the value of 6*l*. 6*s*. to students of the evening school at the end of the session.

ROYAL DISPENSARY AND SCHOOL OF PHARMACY,

*21 West Richmond Street, Edinburgh.*

Principal, Mr. William Duncan, Ph.C., F.C.S., assisted by Mr. W. G. Mackenzie, Ph.C., Mr. C. M. German, Ph.C., and Mr. G. Simpson, Ph.C.

The session is divided into three terms, commencing in October, January, and April, elementary and advanced courses being carried on simultaneously. For Minor and Major students the fee for one term is 8*l*. 8*s*.; two terms, 15*l*. 15*s*. Evening classes, covering the same ground as the day classes, are held on Monday, Tuesday, and Thursday at 8.30. Fee, 3*l*. 3*s*. for a three-months' course, which begins in September.

## CENTRAL SCHOOL OF CHEMISTRY AND PHARMACY,

*25 Clyde Street, Edinburgh.*

Principal, Mr. W. B. Cowie, Ph.C. Assistants, Messrs. W. McEwen, W. Cowie, J. Park, and A. C. Cameron, M.A.

Full courses of instruction, junior and senior, commence on October 3 in day classes, and on August 20 (senior course) and September 3 (junior course) in evening classes. Fee per quarter for Minor or Major course, 8*l*. 8*s*. (day) and 3*l*. 3*s*. (evening). A class for preparing students for examinations the certificates of which are accepted by the Pharmaceutical Society is held on Monday and Thursday evenings at a fee of 1*l*. 1*s*. per quarter.

## GLASGOW SCHOOL OF PHARMACY,

*180 West Regent Street, Glasgow.*

Principal, Mr. John Lothian, Ph.C.; assistants, Mr. Bertram Cockburn and Mr. H. Rodwell.

For the Minor and Major full courses commence October 1, 1900, and continue to the end of March, similar courses beginning on January 7 and April 8, 1901. Fee, 8*l*. 8*s*. per quarter. An advanced course for the October examination begins on October 1, and also evening classes. The fees for the evening classes are 1*l*. 1*s*. for each subject, one evening a week.

## WEST OF SCOTLAND SCHOOL OF PHARMACY,

*157 St. Vincent Street, Glasgow.*

Principal, Mr. T. S. Barrie, Ph.C., with assistants.

At this school there are three terms, beginning on October 2, January 7, and April 8. The day classes for the Minor are held from 10 A.M. to 5 P.M., at fees of 8*l*. 8*s*. per term of three months, or 15*l*. 15*s*. for six months. Major fees by arrangement. Evening classes take place from 8 P.M. to 11 P.M., the fees for which are at the rate of 1*l*. 1*s*. per term for one night per week for Minor and Major. For the Preliminary a class meets on Monday and Wednesday evenings to prepare for the certificate of the Educational Institute of Scotland for which the fee is 1*l*. 1*s*. for the full course.

## IRELAND.

## PHARMACEUTICAL SCHOOLS OF CHEMISTRY, BOTANY, AND MATERIA MEDICA,

*67 Lower Mount Street, Dublin.*

Practical Chemistry Class, Professor Tichborne; Demonstrator, Mr. P. Kelly. Theoretical Chemistry and Physics, Mr. F. N. Binks. Director of the Botany and Materia Medica School, Mr. J. N. Laird, B.A., assisted by Mr. J. S. Ashe.

The fees for the courses in accordance with the regulations of the Society are:—Practical chemistry (6 months), 6*l*. 6*s*.; theoretical chemistry and physics, 1*l*. 1*s*.; botany and materia medica, 2*l*. 2*s*. The Registrar, 67 Lower Mount Street, Dublin, will furnish full particulars and receives the fees.

## BELFAST SCHOOLS OF SCIENCE AND TECHNOLOGY,

*Working Men's Institute, Belfast.*

Principal, Mr. S. Templeton, Assoc.R.C.Sc.

Full courses of instruction in all subjects for the Licence examination begin in the last week of September and the first week in January. The compounding fee for the full course is 8*l*. 8*s*., or the separate fees are—chemistry, 2*l*. 2*s*.; practical chemistry, 4*l*. 4*s*.; botany and materia medica, 2*l*. 2*s*.; pharmacy, 2*l*. 2*s*.



STUDENTS OF THE LEEDS COLLEGE OF PHARMACY OUT BOTANISING.



MR. GEORGE CLAYTON  
(Principal Northern College of Pharmacy).



MR. JOHN LOTHIAN  
(Principal Glasgow School of Pharmacy).



MR. F. H. ALCOCK, of Birmingham.



SHEFFIELD COLLEGE OF PHARMACY STUDENTS ON A BOTANICAL RAMBLE

## Medicine.

THE practice of medicine is not quite so well guarded by law in this country as is the practice of pharmacy. So long as a person confines himself to prescribing without giving the physic, and does not call himself "doctor," or any title implying that he is a registered medical practitioner, he does not act illegally. The Medical Acts give *registered* medical practitioners, and them only, power to recover their charges, and to hold certain appointments while their titles are protected, but only if *registered*. Many who get medical diplomas or degrees do not take the trouble to register, and thus neglect to secure the slight advantages which the Acts confer upon them. Most of the privileges of the medical profession are the outcome of custom and confidence. The individual is more highly esteemed than the class; but the class takes good care that individuals who have not the hallmark do not participate in the privileges that the class has acquired by law and custom. Moreover the public is jealous of the integrity of the medical profession, and through the Medical Acts has given large powers to the supreme medical governing body (called the General Medical Council) for regulating the education and examination of those who desire to become medical practitioners, and for controlling their conduct when registered. It is this Council which sets the pace, so to speak, for all the medical schools and the examining bodies which grant medical diplomas. The Council does not examine or educate; it registers. It is composed of representatives of the Crown, of medical examining bodies, and of medical practitioners. The Council's code for registration consists essentially of three items:—

*First*.—Before commencing medical studies each person must prove by examination that he or she is well educated.

*Second*.—He or she must study medicine, surgery, and midwifery for not less than fifty-seven months at a recognised place or places of instruction.

*Third*.—He or she must pass at least three professional examinations in the subjects of the curriculum during the curriculum, the last examination being at the end of the fifty-seven months.

As some of the subjects of the pharmaceutical examinations are similar to those in the medical curriculum, we are frequently asked if the fact of passing the former excuses one from passing the latter. An emphatic No is the reply. One may in some instances be excused from attending the course of instruction in practical pharmacy during the medical curriculum, and if he has during his pharmaceutical career attended medically recognised courses in botany and chemistry, he is not required to attend them again. That is all the privilege one can obtain. It may be, also, that the Preliminary examination which he has passed is recognised by the General Medical Council, and it is to be expected that in the future the new pharmaceutical Preliminary (which is the same in subjects as the medical) will create a larger number than hitherto of persons who may be registered as medical students. This is a possibility which may be kept in view before entering for any examination, and it has to be remembered that the General Medical Council requires, in some cases, the certificate to show that *the whole of the subjects have been passed at one examination*. On this point see page 416.

### HOW TO BECOME A MEDICAL STUDENT.

Every medical student must register the commencement of his professional studies, after he has passed an approved Preliminary examination, and within fifteen days of the same. The Preliminary examination must be in the following subjects:—

- (a) English language, including grammar and composition.
- (b) Latin, including grammar, translation from specified authors, and translation of easy passages not taken from such authors.
- (c) Mathematics, comprising (a) arithmetic; (b) algebra, as far as simple equations, inclusive; (c) geometry, the subject-matter of Euclid, Books I., II., and III., with easy deductions.
- (d) One of the following optional subjects:—(a) Greek, (b) French, (c) German, (d) Italian, (e) any other modern language, (f) logic.

The General Medical Council publishes a list of the examinations which it recognises (price 6d., from Spottiswoode & Co., New Street Square, London, E.C.). We may say generally in regard to these that a degree in Arts of any British university, the Matriculation or Entrance examinations thereof, if including all the subjects, and the other examinations specified on the pharmaceutical list (page 415), are accepted, as well as certain examinations of colonial, Indian, and foreign universities.

The Preliminary examination taken by medical students depends upon their location. Thus those resident in London try, if they can, to pass the London University Matriculation examination; failing that they take the College of Preceptors' Medical Preliminary. Some in the provinces who are going forward to the Royal Colleges' diploma take the second of these, or matriculate at a university—e.g., the Victoria. In Scotland it is customary for university students to matriculate at their *Alma Mater*; others take the Educational Institute examination. Irish students find the Royal University College of Ireland Matriculation examination a good one for their purpose. There are so few cases in which special advice on this point is necessary, as most students get the examination over before leaving school, that we leave these for special inquiry.

At its last session the General Medical Council decided that no one should be registered as a medical student who is not 16 years of age. The method of registration is briefly this: Having obtained the examination certificate, the student enters a medical school, or other recognised institution, where subjects of the medical curriculum are taught, and gets from the school a declaration that he has commenced studies. The certificate and declaration, with a fee of 5s., are then submitted to the Registrar of the country in which the person studies, viz.:—

**For England and Wales**—Mr. H. E. Allen, LL.B., B.A., 299 Oxford Street, London, W.

**For Scotland**—Mr. James Robertson, 46 George Square, Edinburgh.

**For Ireland**—Mr. S. Wesley Wilson, 35 Dawson Street, Dublin.

Thereupon the student is registered, and his fifty-seven months' curriculum dates from that day, or not more than fifteen days earlier.

### THE CHOICE OF A QUALIFICATION

may be said to have been made ere this happens; but a word of advice may be given here. To those resident in or near towns having medical schools, universities, or medical colleges, we need only say study there. We would recommend those who have to go further afield to study in a university, for the greater part of the outlay will be in living, and the smaller part will as easily secure a degree as a diploma. The Scotch, Durham, and Victoria Universities accept students for their degrees who have studied part of the time only at the particular university, the rest being spent elsewhere, provided the student matriculates at the university. Thus one may study, say, two years at a provincial University College during the earlier part of the curriculum and finish at the University. Some pass the last two years of the period in London (after passing the first two examinations), where the supply of clinical material is liberal, and return to their University to pass the final. The London and the Royal Irish Universities admit students with proper credentials from all quarters to their examinations. The majority of London students go forward for the Royal Colleges' diploma or for the licence of the Society of Apothecaries.

There are seven registrable diplomas in the United Kingdom and twelve degrees (M.B.) which qualify for registration. One advantage of a degree is that the holder may call himself "Dr." without infringing professional etiquette. In England a diplomaed man is always plain "Mr.," but in Ireland and Scotland "Dr." is commonly employed by such. The examinations for a diploma are not usually so exacting as those for a degree, but the curriculum is the same for both, with a few minor differences.

The following shows the nature of the studies year by year:—

## FIRST YEAR.

Winter	Summer
Anatomy	Materia Medica and Practical
Biology	Pharmacy
Osteology Demonstrations	Biology
Chemistry	Anatomy
Physiology	Osteology Demonstrations
	Practical Physiology
	Practical Chemistry
	Chemistry

## SECOND YEAR.

Winter	Summer
Anatomy	Physiological Demonstrations
Practical Physiology	Pathology
Physiology	Practical Medicine
	Applied Anatomy
	Practical Surgery

## THIRD YEAR.

Winter	Summer
Medicine	Pharmacology and Therapeutics
Surgery	Practical Anaesthetics
Practical Medicine	Midwifery
Elementary Bacteriology	Forensic Medicine
Applied Anatomy	Toxicology
Practical Anaesthetics	
Practical Surgery	

## FOURTH YEAR.

Winter	Summer
Medicine	Public Health
Surgery	Operative Surgery
Practical Midwifery	Anaesthetics

## FIFTH YEAR (Winter).

Ophthalmology  
Psychological Medicine

## THE COST OF QUALIFICATION

is another point which must be taken into consideration. Subsequently we mention what the various schools in the United Kingdom charge for the five-years' educational course, but to these fees must be added various extras, such as the cost of anatomical subjects, apparatus and instruments, books, tutorial fees, and fees for special classes, 10% to 20% a year being necessary for these, whatever the school may be. Besides the cost of education there is also the cost of examination and the diploma, as well as the registration-fee (5% 5s.), payable to the medical registrar. Altogether, therefore, at least 200% must be allowed for the curriculum, and that is a low figure, although it is possible to do it in Glasgow for 50% less. In every medical school scholarships are offered for the clever, and many a man has, by gaining these, paid the whole cost of his studentship, including living expenses. What has been done can be done again.

As already stated every consideration should be given to

## THE QUALIFICATIONS

which are available. After taking locality into consideration it is safe to follow the crowd, so to speak, and the following statistics, showing how many passed the final examinations of qualifying bodies in 1899, form a fair guide:—

L.M., Dubl....	...	1	Irish Double Qual...	...	76
M.B., Oxon....	...	6	Ditto (with L.A.H.)	...	2
M.B. & Ch.B., Aberd.	...	38	M.B., Lond.	...	92
M.B., Durh....	...	43	M.B., &c., Dubl.	...	127
M.B., &c., R.U.I.	...	52	M.B. & Ch.B., Edin.	...	207
M.B. & Ch.B., Vic.	...	53	Scotch Triple Qual.	...	224
M.B. Cantab.	...	62	L.S.A.	...	300
M.B. & Ch.B., Glasg.	...	72	English Double Qual.	...	513

It will be seen from this that the most popular diploma is M.R.C.S. Eng. and L.R.C.P. Lond., the most popular degree being that of the Edinburgh University. The fact is, of course, that these numbers reflect the greatest educational centres. Edinburgh and London rival each other in numbers of medical students, but London has many more medical schools, and the clinical material is the best in the world in point of variety; hence London keeps most of her own students and draws others from the provinces and abroad. Edinburgh depends chiefly upon outsiders, and the fame of that school, and the value of the degree, are largely responsible for the numbers attracted there.

London students and those in the English provinces choose either the double qual. or the L.S.A., the latter being the cheaper, and many students in Scotland take the Scotch triple qual. These, as a rule, do not graduate at a university, but some who graduate take a diploma as well. This is especially the case with those who take M.B. London or Cambridge. In the subjoined paragraphs we give concise particulars about each qualification:—

**L.R.C.P. Lond. and M.R.C.S. Eng.**—This is best known as the "English double qual." It is not open to women. There are three professional examinations. The *first* may be taken one subject at a time (chemistry and physics, practical pharmacy, and biology) any time, even *before*, registration as a medical student, and pharmacy may be taken at any time during the curriculum. The *second* examination is in anatomy and physiology, both of which must be passed at one examination. The *third* or *final* examination is in three parts, which may be taken separately or altogether: I. Medicine, pathology, therapeutics, forensic medicine, and public health; II. Surgery, pathology, and surgical anatomy; III. Midwifery and diseases of women. The total fees are 42l. The necessary class, &c., certificates have to be produced before each examination. *This applies to all the bodies.* Secretary of the Examining Board, Mr. F. G. Hallett, Examination Hall, Victoria Embankment, W.C.

**L.R.C.P. & S. Edin. and L.F.P.S.G.**—The Examinations can only be taken *after* registration as a medical student. There are four professional examinations, and pharmacy is taken in the third. These fall at the ends of the first, second, fourth and fifth years. Fees, 30l. Secretaries, Mr. J. Robertson, 48 George Square, Edinburgh, and Mr. A. Duncan, L.L.D., 242 St. Vincent Street, Glasgow.

**L.K.Q.C.P.I. and L.R.C.S.I.**—There are four Professional examinations (the first including elementary anatomy). Fees, 42l. Registrar, Mr. G. F. Blake, 6 Kildare Street, Dublin.

**L.A.H.**—There are four Professional examinations, divisible as in the preceding instances. Fees, 22l. 1s. Secretary, Dr. R. Montgomery, 40 Mary Street, Dublin.

**L.S.A.**—The Primary examination is in the same subjects as the first "double qual." and may be taken in two parts. Biology, chemistry, pharmacy, and materia medica (making Part I, with conditions as to study the same as the "double qual.") The *Final* is in three sections, each divided into parts. Fees, 15l. 15s. Secretary, Mr. F. Haydon, Apothecaries' Hall, Blackfriars, E.C. Not open to women.

**M.B., Oxon.**—Candidates must be B.A.'s of the University, which requires twelve to sixteen terms residence in Oxford, but medical studies may proceed simultaneously with part of the Arts course, the combined curricula covering fully six years. Three Professional examinations. Consult the University Calendar. Women not admitted.

**M.B., Cantab.**—Students pass the Previous examination, and reside at the University in whole or part of nine terms, and the rest of five years at any approved medical school. Three Professional examinations and an Act. Fees, 12l. 12s. See the Calendar of the University. Women not admitted.

**M.B., Dunelm.**—One year's residence at the College of Medicine, Newcastle, is essential. Preliminary examination in Arts required of those who have registered as medical students, unless they have matriculated at Cambridge, London, or Oxford, or are Arts graduates. Four Professional examinations. Fees, 31l. 6s. Apply to Professor Howden, Coll. Med., Newcastle-on-Tyne.

**M.B., Lond.**—Students matriculate and pass the Preliminary Scientific (M.B.), the Intermediate, and M.B. examinations. Fees, 15l. Address, The Registrar, Burlington Gardens, London, W., for M.B. Regulations.

**M.B., Vic.**—An Entrance examination or its equivalent has to be passed. Residence for two of the five years in Manchester, Liverpool, or Leeds. Examinations as in London. Fees, 15l. Address, The Registrar, Victoria University, Owens College, Manchester.

**M.B., B.Ch., Birmingham.**—The new University of Birmingham is to grant the degrees of Bachelor of Medicine and Bachelor of Surgery. The student must matriculate and pass five professional examinations. First.—Part 1: Elementary Biology. Part 2: Chemistry and Physics. Second.—Anatomy and Physiology. Third.—Materia Medica and Pharmacy. Fourth (at the end of the fourth year).—Pharmacology, Pathology, Forensic Medicine, and Public Health. Final.—Medicine, Surgery, Midwifery, Gynaecology, Mental Diseases, and Ophthalmology. Fees, 19l. Dean, Professor Windle, at the University.

**M.B., Ch.B., Edin., &c.**—The regulations for all the Scotch university degrees are identical. A Preliminary examination, or

its equivalent, has to be passed. (Compare p. 416). During two of the five years of the curriculum the student must attend the university whose degree he seeks. There are four Professional examinations. Fees, 23*l.* 2*s.* Address, Dean of the Faculty of Medicine, University of Edinburgh, Glasgow, Aberdeen, or Dundee. The last-named town has a University College affiliated to St. Andrews University, and the first two years of the curriculum can be taken there or at St. Andrews.

**M.B., Dubl.**—Conditions the same as at Oxford. Fees, 17*l.* Address, The Registrar, School of Physic, University of Dublin. Not open to women.

**M.B., R.U.I.**—Candidates pass the Matriculation and First university examination before entering the medical school. Four Professional examinations. Fees, 15*l.* Address, The Secretary, R.U.I., Dublin.

### SCHOOLS OF MEDICINE.

THE subjoined paragraphs epitomise the cost of education at the recognised medical schools of the United Kingdom. The fees do not include such needful extras as apparatus, instruments, anatomical and other specimens, and books, nor examination-fees.

#### LONDON SCHOOLS.

**Charing Cross Hospital,** The Medical School, Chandos Street, W.C.—Fees, 115*l.* 10*s.*, or 127*l.* 1*s.* in instalments. There is a reduction made to the sons of registered medical practitioners. Dean, Dr. Montague Murray.

**Guy's Hospital,** Borough, S.E.—Fees, 157*l.* 10*s.*, or 168*l.* in instalments. Has a residential college, in which rooms cost from 14*s.* to 27*s.* per week, and board 1*l.* 1*s.* per week. Dean, Dr. L. E. Shaw.

**King's College,** Strand, W.C.—Fees for London M.B. curriculum, 148*l.*, or 164*l.* in four instalments. Has a residence; terms, 50*l.* to 60*l.* (rooms and dinner) per academical year. (All students must attend a course of Divinity lectures in the first year, unless exempted.) Dean, Professor A. W. Hughes, M.B.

**London Hospital,** Mile End, E.—Fees, 126*l.*, or 136*l.* 10*s.* in instalments (sons of medical men 15*l.* 15*s.* less). Warden, Mr. Munro Scott, Turner Street, Mile End, E.

**London School of Medicine for Women,** 8 Hunter Street, Brunswick Square, W.C.—Fees, 126*l.*, or 136*l.* in four instalments. Dean, Mrs. Garrett Anderson, M.D.

**Middlesex Hospital,** Cleveland Street, W.—Fees, 141*l.* 15*s.*, or 147*l.* in instalments. Dean, Dr. W. Pasteur. Residential college, 14*s.* 6*d.* to 17*s.* 6*d.* per week (exclusive of board). Warden, Dr. R. A. Young.

**St. Bartholomew's Hospital,** West Smithfield, E.C.—Fees, 157*l.* 10*s.*, or 168*l.* in instalments. Has a residence for students. Warden, Dr. J. Calvert.

**St. George's Hospital,** Hyde Park Corner, S.W.—Fees, 150*l.*, or 160*l.* in instalments, with a dissecting-room charge of 3*l.* 3*s.* per annum. Dean, Dr. Isambard Owen.

**St. Mary's Hospital,** Cambridge Place, Paddington, W.—Fees, 140*l.*, or 145*l.* in instalments. Dean, Dr. H. A. Caley.

**St. Thomas's Hospital,** Albert Embankment, S.E.—Fees, 150*l.*, or 157*l.* 10*s.* in instalments. Medical Secretary, Mr. G. Rendle.

**University College,** Gower Street, W.C.—Fees, 141*l.* 15*s.*, or 147*l.* in instalments. Dean, Professor H. R. Spencer, M.D.

**Westminster Hospital,** Caxton Street, S.W.—Fees, 115*l.* 10*s.*, or 141*l.* 15*s.* in six instalments. Dean, Mr. Tubby.

#### ENGLISH PROVINCIAL SCHOOLS.

**Aberystwith and Banor University Colleges,** so far as the First Professional examination is concerned.

**Birmingham.**—*University Faculty of Medicine.* Fees (complete for double qualification, including dissections), 163*l.* 19*s.* Dean, Prof. Bertram C. A. Windle.

**Bristol.**—*University College.*—Fees, 107*l.* 5*s.* (in one sum). Dean, Professor E. Markham Skerrett, M.D.

**Cambridge.**—*University Medical School.* Apply to the Registry, the Register, University, Cambridge.

**Cardiff.**—*University College.*—Instruction goes up to and including Intermediate M.B. London. Fees, 57*l.* 10*s.*, or for Conjoint Board 40*l.* Dean, Dr. A. Francis Dixon, B.A.

**Leeds.**—*Yorkshire College.*—Fees for M.B. Victoria, 156*l.* 17*s.* 6*d.*; for "double qual.," 175*l.* 8*s.* 6*d.* Dean, Mr. Scattergood, M.R.C.S., 41 Park Square.

**Liverpool.**—*University College.*—Fees, 135*l.* 3*s.* for M.B. Vic. curriculum. Dean, Professor Paterson.

**Manchester.**—*Owens College.*—Fees for M.B. Vic., 128*l.* 5*s.*, exclusive of special courses. Dean, Professor A. H. Young, F.R.C.S.

**Newcastle-on-Tyne.**—*Durham College of Medicine.*—Fees, 99*l.* 15*s.*, with some extras. Secretary, Professor Howden.

**Oxford** has an excellent school of medicine.

**Sheffield.**—*School of Medicine.*—Fees, about 110*l.* Dean, Dr. W. T. Cocking, Leopold Street.

#### IRISH SCHOOLS.

**Belfast.**—*Queen's College.*—Fees, about 95*l.* Registrar, Dr. John Purser.

**Cork.**—*Queen's College.*—Fees (for R.U.I.), about 85*l.* M.B. Registrar, Mr. Alexander Jack, M.A.

**Dublin.**—*Catholic University Medical School,* Cecilia Street.—Fees for "double qual." or M.B. curriculum, 160*l.* Registrar, Dr. A. Birmingham.

*School of Physic in Ireland* (Trinity College).—Fees, 124*l.* 19*s.* Registrar, Mr. H. W. Macintosh, M.A., Trinity College.

*Carmichael and Ledwich Schools of Surgery.*—Fees for "double qual.," 107*l.* 2*s.* Registrar, Mr. G. F. Blake.

*Royal College of Surgeons.*—Schools of surgery. Composition fee for double qualification, 166*l.* 19*s.*

**Galway.**—*Queen's College.*—Fees, as at Cork. Registrar, Professor Townshend.

Part of the curriculum may also be obtained at the Royal College of Science, Dublin, and University College, Stephen's Green, Dublin.

#### SCOTCH SCHOOLS.

**Aberdeen.**—*University Faculty of Medicine.*—Fees, about 90*l.* Secretary, Mr. Donaldson R. Thom, M.A.

**Dundee.**—*University College.*—Classes and hospital practice for the first three years. The college is affiliated to St. Andrews University. Secretary, Mr. R. N. Kerr.

**Edinburgh.**—*University Faculty of Medicine.*—Minimum class and hospital fees, 115*l.* Secretary, Mr. John Kirkpatrick. Women are admitted to the classes.

*School of Medicine of the Royal Colleges.*—Fees for triple qualification curriculum, including the fees for the joint examinations, 115*l.* Secretary, Mr. R. N. Ramsay, 24 Forrest Road, Edinburgh.

**Glasgow.**—*University Faculty of Medicine.*—Fees about 120*l.* Assistant-clerk, Mr. W. Innes Addison, Matriculation Office.

*Anderson's College Medical School,* Dumbarton Road, Partick.—Fees for Scotch triple, about 70*l.* Acting Secretary, Professor R. Barclay Ness.

*Queen Margaret College,* 98 St. George's Road (Glasgow University School of Medicine for Women). Fees for M.B., about 99*l.* Hon. Secretary, Miss Galloway.

*St. Mungo's College,* 86 Castle Street.—Fees for triple qualification, about 72*l.* The Dean will supply a detailed syllabus.

**St. Andrews.**—*University Faculty of Medicine.*—The subjects for the first two years of the curriculum are taught. (See Dundee.) Fees, 3*l.* 3*s.* per subject. Secretary, Mr. J. M. Anderson.

## Dentistry.

THE practice of dentistry and the registration of dental practitioners are controlled by the General Medical Council, which has imposed the following regulations:—

1. The student must pass an examination in preliminary education recognised for registration as a medical student.

2. He must, on beginning his dental studies, having passed the examination, register as a dental student.

3. He must be engaged for four years in the study of the

subjects prescribed. This four years must include three years' engagement in practical dentistry under a registered dental practitioner, and two years in a dental college and hospital. One of the latter two years and one of the three years' pupillage may be concurrent.

4. The Professional examinations of the qualifying body must be passed.

Dentistry is, like pharmacy, an art which for many years

was practised without professional training, so-called; but the Dentists Act of 1878 changed that, and, after registering all those then practising, required that in future persons desirous of registration should by examination give "evidence of professional education." At the same time, registered dentists were brought within the disciplinary powers of the General Medical Council, which has recently removed names of persons from the register on account of objectionable advertising. Until the present year the only diplomas available in dentistry were those of the Royal Colleges, but the new University of Birmingham is in future to grant

#### DENTAL DEGREES,

and the reconstituted University of London has something of the same kind in view. The Birmingham University will confer the Bachelor of Dental Surgery (B.D.S.) upon any candidate who has obtained a Licence in Dental Surgery from some body legally entitled to confer such qualification. The candidate is not eligible for the degree until twelve months from the passing of his examination for the Licence, and of this period at least six months must be spent in the dental department of a general hospital approved by the University. *A.* In addition to the Licence the candidate must produce evidence that he has attended the courses required by medical students of the University in the following subjects and passed the examinations held in the same for medical and surgical degrees:—(*a*) Chemistry and practical chemistry; (*b*) physics and practical physics; (*c*) biology; (*d*) anatomy and practical anatomy; (*e*) physiology and practical physiology. *B.* That he has attended the following courses:—(*f*) Lectures on medicine; (*g*) lectures on surgery; (*h*) lectures on the surgery and medicine of the mouth; (*i*) pathology and bacteriology. Also that he has passed the examinations for candidates for dental degrees held in each of these subjects. Further, *C.* he must attend courses in (*k*) dental histology and patho-histology; (*l*) comparative dental anatomy; (*m*) dental surgery and prosthetic dentistry; and, *D.* received instruction in the clinical examination of living cases at the dental department of a general hospital for a period of not less than six months. The Final examination will deal with the subjects in Classes *C* and *D*. On the expiration of twelve months from the date of passing the examination for the degree of Bachelor the candidate will be eligible for that of Master of Dental Surgery (M.D.S.).

This looks rather involved, but it is largely a repetition, so far as the curriculum is concerned, of the conditions which the candidate fulfils in preparing for a dental diploma such as is granted by the Royal College of Surgeons, London; the Royal College of Surgeons, Edinburgh; the Faculty of Physicians and Surgeons, Glasgow; and the Royal College of Surgeons, Ireland.

#### FOR L.D.S. ENG.

the examinations are arranged as follows: The first or "Preliminary Science examination" is in chemistry, physics and practical chemistry. Candidates may present themselves for it before entering a dental school or before registration as dental students on producing evidence of instruction in the subjects at an approved school. The second examination is the "First Professional examination," and is open to candidates who have had three years' instruction in mechanical dentistry, have been registered as dental students, and have attended the necessary lectures and practical instruction in mechanical dentistry and dental metallurgy, which are the subjects of examination. The Final, or "Second Professional examination," can only be taken at the end of the fourth year, when the candidate is 21 years old, and after evidence of having received collegiate and hospital instruction in dental anatomy and physiology, dental histology, dental surgery, and the surgery of the mouth, and two years' practice in a dental hospital. Evidence must also be produced of having attended, at a recognised medical school, lectures on anatomy, physiology (with practical work), surgery, medicine, performed dissections during not less than twelve months, and attended the practice of surgery and clinical lectures on surgery during two winter sessions. The examination is in these subjects, and includes a practical examination in the treatment of dental caries, preparing and filling cavities with gold or plastic filling or

material, or to do any other operation in dental surgery; also on the mechanical and surgical treatment of the various irregularities of children's teeth. An oral examination is also held.

The fees amount to 21*l.*; 3*l.* 3*s.* being paid for the "Preliminary Science," 2*l.* 2*s.* for the "First Professional," and 5*l.* 5*s.* for the "Second Professional," the balance being paid before the licence is granted. For further particulars apply to Mr. Hallett, Examination Hall, Victoria Embankment, London, W.C.

*L.D.S. Edin.*—The requirements are substantially the same as in England, but there are two examinations only, both taken subsequent to registration as a dental student. The subjects of the First examination are anatomy, chemistry, physics, and physiology, the rest of the subjects of the curriculum being taken in the Second examination. Fees, 15*l.* 15*s.*; Mr. James Robertson, 48 George Square, Edinburgh, is the Secretary.

*L.D.S. Glasg.*—Examinations and fees as in Edinburgh Secretary, Dr. A. Duncan, 242 Vincent Street, Glasgow.

*L.D.S. Irel.*—This diploma costs 26*l.* 5*s.* *sine curriculo*, or 21*l.* *cum curriculo*. The latter is like the Edinburgh one. The conditions for the former are as follows:—

Application for examination should be made on a form obtainable at the College, setting forth a Certificate, signed by two Fellows, members, or licentiates of a College of Surgeons, and by two L.D.S.Irel. (or two members of the British Dental Association, or of the Odontological Society), to the effect that applicant is of good moral character, has been for five years engaged in the practice of dentistry, is a registered dentist, and has not, during the last two years, attracted business as a dentist by advertising or other unbecoming practices. The last fact must also be attested before a magistrate, and the applicant must subscribe to a declaration that he will not advertise.

The candidate must pass the Final examination in dental surgery—theoretical including dental pathology, clinical, and operative; dental mechanics—theoretical, clinical, and practical including the metallurgy of the workshop. Candidates must pass in all the subjects at the same time. Fee, 26*l.* 5*s.*

The Registrar, Royal College of Surgeons, Dublin, will supply further particulars if desired.

#### EDUCATIONAL ESTABLISHMENTS.

##### LONDON.

**Guy's Hospital Dental Department and School,** Borough, S.E.—Dean, Dr. L. E. Shaw. Fees for L.D.S. Eng., 11*l.*

**Dental Hospital of London,** Leicester Square, W.—Dean, Mr. Morton Smale. Fees for complete curriculum, 115*l.* 10*s.* in instalments.

**National Dental Hospital and College,** Great Portland Street, W.

##### PROVINCIAL.

**Birmingham.**—*University Dental Department.*—Fees, about 75*l.* Dean, Professor Windle.

**Dublin.**—*Dental Hospital and School of Ireland,* 25 Lincoln Place. Acting Dean, Dr. A. W. W. Baker. Fees, 73*l.* 10*s.*

**Edinburgh.**—*Dental Hospital and School,* 31 Chambers Street. Dean, Mr. W. Guy, 11 Wemyss Place. Fees, 63*l.*

**Liverpool.**—*University College School of Dental Surgery.*—Dean, Professor A. M. Paterson. Fees, 71*l.*

**Manchester.**—*Owens College Dental Department.*—Fees, 71*l.* Dean, Professor A. H. Young, F.R.C.S.

Hospital practice, or instruction in practical dentistry as given in the following institutions, is recognised by the examining boards:—Charing Cross Hospital, W.C.; King's College, W.C.; London Hospital, Mile End, E.; Middlesex Hospital, Berners Street, W.; St. Bartholomew's Hospital, Smithfield, E.C.; St. George's Hospital, Grosvenor Place, S.W.; St. Mary's Hospital, Paddington, W.; St. Thomas's Hospital, University College, Westminster Hospital, Bristol Infirmary Dental Department, Exeter Dental Hospital, Glasgow Infirmary Dental Department, Anderson's College Dental Department, Newcastle Infirmary Dental Department, and Plymouth Dental Hospital.

## Veterinary Surgery.

THE Veterinary Surgeons Act came into force in 1881, and at first the old Pharmaceutical Preliminary examination was taken as proof of elementary education. In 1893 the standard was raised, and the candidate is now required to pass one of the examinations recognised by the General Medical Council. The new regulations for entrance into pharmacy are in some cases the same as the medical requirements; the differences are pointed out in the section dealing with the Medical Preliminary. The veterinary course of study extends over four years; this and the severity of the entrance-examination is probably the reason why there are fewer aspirants to the veterinary profession than formerly. Many students prefer to devote another year to their studies and enter the medical profession. The Veterinary Surgeons Act, like the Medical Acts, protects the titles of registered veterinarians, but does not give them a monopoly of veterinary practice. It may be pointed out that it has been decided in the High Court that a registered chemist and druggist may use the title "veterinary chemist." During the year a Royal Veterinary College has been founded by Royal charter in Ireland, the first course at which begins in October. As the majority of the students in the three Scotch veterinary colleges are drawn from Ireland, it is likely that the prosperity of these colleges will be affected.

The Royal College of Veterinary Surgeons, 10 Red Lion Square, London, W.C. (to whom all inquiries regarding the examinations should be addressed), have made the following regulations for their diploma of M.R.C.V.S. :—

(1) The candidate must pass the Preliminary examination in general education recognised by the General Medical Council before entering for the first professional examination.

(2) He must study at a recognised veterinary school for four years, and during that time

(3) pass four professional examinations, viz. :—

EXAMINATION A.—Anatomy of domesticated animals: bones, ligaments, joints. Chemistry and elementary physics. Biology: elementary zoology and botany.

EXAMINATION B.—Anatomy of domesticated animals. Histology and physiology. Stable management and manipulation of domesticated animals. Principles of shoeing.

EXAMINATION C.—Morbid anatomy, pathology, and bacteriology. Materia medica, pharmacy, therapeutics, and toxicology. Veterinary hygiene and dietetics.

EXAMINATION D.—Principles and practice of veterinary medicine and surgery. Clinical medicine, surgery, and obstetrics (horse and other domesticated animals). Meat inspection.

(4) The candidate must be twenty-one years of age when entering for D.

The examinations are conducted by a Board of Examiners, which visits Edinburgh, Glasgow, Dublin, and London towards the end of the College terms (May and December). A fee of 5*l.* for each examination has to be paid to the Royal College at a specified date before the examination, and after the fourth is passed 1*l.* is paid for registration. The following are the institutions which instruct students for the examinations. It should be noted that none of these institutions is in any way connected with the Royal College of Veterinary Surgeons which is an examining but not a teaching body :—

**Royal Veterinary College**, Great College Street, Camden Town, London, N.W.—Educational fee, 84*l.*, paid in four instalments, and 2*l.* 12*s.* 6*d.* library fees. Principal and Dean, Prof. John McFadyean, M.R.C.V.S. Secretary, Mr. R. Powys.

**Royal (Dick) Veterinary College**, Clyde Street, Edinburgh.—Matriculation and education fees, 58*l.* 16*s.*, in four payments. Principal, Professor J. R. U. Dewar, F.R.C.V.S.

**The New Veterinary College**, Leith Walk, Edinburgh.—Matriculation and education fees, 58*l.* 16*s.*, in four payments. Principal, Professor William Williams, F.R.C.V.S.

**Glasgow Veterinary College**, Buccleuch Street, Garnet-hill, Glasgow.—Fee, 60*l.*, or 3*l.* in instalments. Principal, Professor J. McCall, F.R.C.V.S.

**Royal Veterinary College of Ireland**, Pembroke Road, Dublin.—Fees, 21*l.* a session. Principal, Professor A. E. Mettam, B.Sc.

The title of F.R.C.V.S. is granted to members who have been a certain time in practice, and on further examination or on presenting a thesis which is approved.

Veterinary appointments in the Army are open for competition, the commencing salary being 250*l.* a year, with rank as lieutenant, increasing by advancement to 850*l.*, the salary of the principal veterinary surgeon, who ranks as colonel.

## Science.

IN this department the question which we are most frequently asked is: How can I become an analytical chemist? There are the vaguest notions abroad in regard to this matter, and it is well that we should first deal with it, especially as it is the direction in which many young pharmacists who get a love for chemistry long to go.

They will be none the worse for being told at the outset that it is an uphill struggle—that of trying to make a living by chemical analysis. The successful analyst is something more than a mere manipulator. He must be a man of exceptionally sound judgment, well versed in chemistry generally, and unless he has a special knowledge of one or two departments—*e.g.*, explosives, leather, oils, beer, spirits, and alkaloids, he can never get beyond a certain level—the level of the very ordinary.

There is no legal restriction on the practice of chemical analysis, and anyone, with or without knowledge or qualification, may set up as an analytical chemist. As long as he does not keep an open shop for the sale of poisons the Pharmaceutical Society will not interfere with him. By the 1868 Pharmacy Act the title "chemist" is reserved to those who are registered under that Act.

Although there is no legal restriction to analytical practice the Institute of Chemistry has had it circumscribed to some extent. This Institute was founded in 1877, much on the lines of the Pharmaceutical Society of Great Britain, and up to the present it has done for analysts such work as the Pharmaceutical Society did for pharmacists until 1868—*i.e.*, provided examinations (voluntary) and granted certificates to qualified analysts. The Institute has been so far successful as to get Government authorities to agree that in future none should be appointed official analysts (such as public analysts) except those who are fellows of the Institute.

### THE F.I.C.

is otherwise recognised, for those who hold science degrees, and who propose to make their living in any way connected with chemical industry or trade, find it an advantage to pass the Institute's examinations. Of these there are three—

I. A Preliminary examination in subjects of general education (*i.e.*, one of the examinations recognised by the General Medical Council).

II. An Intermediate examination in general theoretical and practical chemistry.

III. A Final Practical examination in a selected branch of chemical science.

On producing evidence of having passed the first examination and attained the age of 17, the candidate is registered as a student of the Institute. The next step is to become either a pupil of a Fellow of the Institute, or enter a recognised college or university for a course of three years' study in theoretical and practical chemistry, as well as physics, elementary mathematics, and one optional science subject. Pupils to Fellows need only two years at college, and two with the F.I.C. The candidate may, as soon as these conditions are fulfilled, enter for the Intermediate examination in qualitative and quantitative chemical analysis, as well as theoretical chemistry. When he is 21 the candidate may enter for the Final practical examination in a selected branch of chemical science—*e.g.*, mineral chemistry, metallurgical chemistry, physical chemistry, organic chemistry, and analysis of food and drugs. In order to meet the requirements of the Local Government Board for the appointment of public analyst in regard to therapeutics, pharmacology, and microscopy, a course of study in these

subjects is recommended by the Institute, which should cover the following work:—

The recognition of specimens of any drug or poisonous chemical ordinarily to be found in commerce or employed for technical purposes in the arts or manufactures; the detection by microscopical or chemical examination of adulterations, substitutions, or impurities in food and drugs. Such a course would also include a general knowledge of the therapeutic effects of ordinary drugs, and of the quantities of such drugs and poisonous chemicals which, taken internally, would be injurious or fatal to man.

It is open to all Fellows and Associates to present themselves for an examination as follows:—The recognition of specimens of poisonous chemicals and crude drugs ordinarily found in commerce, and having well-marked physical characters; the detection, by inspection or by means of the microscope, of adulterations, substitutions, and impurities. Candidates are required to show a general knowledge of the therapeutic effects of such chemicals and drugs, and of the quantities which, taken internally, would be injurious or fatal to man.

The examination-fees for the associateship are 7*l.* 7*s.*, and after a certain time has elapsed all associates are promoted to the fellowship without further examination. B.Sc.'s, Ph.D.'s, and College Associates are excused certain parts of the examinations. Full particulars may be obtained from the Registrar, Institute of Chemistry, 30 Bloomsbury Square, London, W.C.

The first consideration in starting a scientific career is to ensure that one has thoroughly sound school education, including a good knowledge of elementary mathematics and an intimate knowledge of French or German, but preferably of both, as current scientific literature in both of these languages is quite as important to the scientific practitioner as the English literature. While the

#### INSTITUTE OF CHEMISTRY

insists that those who wish to be registered as students of that body should produce evidence of having passed an examination recognised by the General Medical Council, it is the common practice of students of science to matriculate at the London University, because the Matriculation examination is an "open sesame" to almost every scientific qualification in the United Kingdom, except for the degrees of the Universities of Cambridge, Dublin, and Oxford. It follows, therefore, that the student by passing this Matriculation examination before beginning his professional studies can go forward to the University Science degree, as well as any other qualification that he may desire. Hence we give the following particulars of the examination:—

There are two examinations for matriculation in each year, one commencing on the second Monday in January, the other on the second Monday in June.

Entry forms, which may be had from the Registrar, University of London, Burlington Gardens, London, W., must be sent in before May 1 for the June examination, and before December 1 for the January examination, together with a fee of 2*l.*

Provincial examinations are also held, under special arrangement, in different parts of the United Kingdom. Candidates at these centres are required to pay an additional local fee, usually varying from 1*l.* to 2*l.*

Candidates must show a competent knowledge in each of the following subjects, according to the details specified under the several heads in the *Regulations for Matriculation*, which will be supplied gratis and postfree on application to the Registrar:—

1. Latin;
2. English;
3. Mathematics;
4. General Elementary Science;
5. Any one of the following languages or sciences at the option of the candidate:—Greek; French; German; Sanskrit; Arabic; Elementary Mechanics; Elementary Chemistry; Elementary Sound, Heat, and Light; Elementary Magnetism and Electricity; Elementary Botany.

The Latin subjects already announced are:—

For June, 1900—Caesar, *Gallie War*, Book IV. chap. 20 to end of Book V., chap. 23.

For January, 1901—Virgil, *Aeneid*, Book II.

For June, 1901—Sallust, *Catiline*.

No French or German books are prescribed.

*Free Guide to Matriculation*, obtainable from the Secretary, University Correspondence College, 32 Red Lion Square, London, W.C., contains a complete set of questions given at the previous examination.

#### THE SCIENCE EXAMINATIONS

of the London University are the Intermediate, and the Final B.Sc. In the Intermediate examination, for which the fee is 5*l.*, students are permitted to select four out of six subjects—namely, pure mathematics, mixed mathematics, physics, chemistry, botany, and zoology. Very few go in for this examination until they are at least eighteen years old, for, supposing one passed the matriculation at the minimum age of 16, there would be required at least two years' study in the four subjects to master them sufficiently thoroughly to pass the examination. A person intending to make his living by analytical or applied chemistry should take one of the mathematical papers as well as physics, chemistry, and botany. In pure mathematics a knowledge of elementary conic sections and trigonometry sufficient to cover the solution of plain triangles is expected. Physics includes heat, light, sound, magnetism, electricity, and energy generally, and there is a practical examination as well as a written one. In the practical the student has to be familiar with the physical apparatus and how to use it. In chemistry a sound knowledge of inorganic is required, and qualitative and simple quantitative analysis is also given. The Practical examination is very simple. In zoology and botany two papers (in each) are given, and a day's practical work with the dissecting-knife and microscope. The whole of the four subjects selected must be passed at one time. Failure in one means failure in all.

The Final B.Sc. examination is in three subjects, to be selected from the six already specified, as well as physiology and geology. This examination is written and practical. In the chemistry practical examination the student is required to be expert in qualitative and quantitative analysis (including the determination of carbon, hydrogen, nitrogen, sulphur, phosphorus, chlorine, bromine, and iodine in organic compounds, determination of molecular weights and vapour-densities, and gas-analysis), and the preparation of pure organic compounds. The theoretical examination is very searching, and requires a sound knowledge of modern ideas in the science. Fee, 5*l.* One year must elapse between the Matriculation and Intermediate examinations, and at least another year between Intermediate and the Final B.Sc. The examination may be taken in honours or as a pass.

The degree is highly valued, and the majority of students in the leading scientific schools in London go forward to it, some of them proceeding to the D.Sc. degree, which may be obtained two years after graduation as B.Sc., the candidates submitting a thesis on some research on which he or she has been personally engaged. If this thesis is accepted an examination may follow it, but those who have taken the B.Sc. with first-class honours are not submitted to this examination.

Degrees in science are also granted by the Victoria University, the University of Birmingham, the University of Durham, the Scotch universities, and the Royal Irish University. The last-named university, like the London University, grants its degrees *sine curriculo*, but all the others require attendance at the university classes or other recognised schools, a portion of the curriculum being obtained at the university granting the degree. These institutions give a wide range of departments in which the degree may be taken—*e.g.*, agriculture, hygiene, engineering, and chemical science. It is possible, therefore, for a science student to select a degree in the department allied to the work to which he intends to devote his life.

We cannot enter more fully into the regulations regarding these degrees, but we may state that the examinations for them are akin to those of the London University, except that in some instances the examinations are divided into parts, so that the candidates are relieved from much of the cram that is apt to be used for the London examination. Although we have specially commended the B.Sc. London, we wish it to be clearly understood that the provincial degrees are not a whit behind it in esteem, and the fact should not be overlooked that some of the provincial universities offer special facilities in regard to education. For example, the University Colleges affiliated to the Victoria University have departments devoted to dyeing, leather, metallurgy, and so on, which are of special value to chemists who propose to associate themselves with any of these

industries. So, also, in the case of the University of Glasgow, whose engineering department is one of the best in the kingdom; while the universities of Edinburgh and Durham have educational departments of a high order.

#### GOVERNMENT CHEMISTS.

In our last Educational Number we gave very full particulars regarding the analytical appointments in the Government Laboratory, Clement's Inn Passage, London, W.C. We do not propose to repeat the information in detail, but may state generally that applicants for the appointments must be assistants of Inland Revenue or junior officers of the Customs Department. Consequently, the first step to be taken is to compete for either of these positions. Particulars in regard to these may be obtained from the Civil Service Commission, Cannon Row, London, S.W.

Appointments in the Laboratory are open to assistants or junior officers between 19 and 22 years of age, and they are required to pass an examination in elementary inorganic chemistry, organic chemistry, and physics, as well as algebra up to quadratic equations and Books I. and II. of Euclid. Those who pass this examination spend two years in the Royal College of Science, South Kensington, in the study of theoretical and practical chemistry and its associated subjects. Thereafter they enter the Government Laboratory as temporary assistants. While studying at South Kensington the novitiates receive the salaries of their office and the grant of 10% for books and apparatus. The next stage after that of temporary assistant, is the appointment as second-class analyst, to which a salary of 160*l.*, increasing by 15*l.* annually, is attached. It is possible to reach a salary of 800*l.* on appointment as Deputy-Principal. The Principal of the Laboratory is Dr. T. E. Thorpe, F.R.S., who was previously Professor of Chemistry in the Royal College of Science, and the precedent of appointing an outsider to this position is likely to be followed in future.

There are other Government appointments for chemists, such as in Woolwich Arsenal. These are advertised as vacancies occur, and applicants must produce evidence of their qualifications and undergo an examination.

#### GOVERNMENT SCHOLARSHIPS.

The annual examinations in science held under the authority of the Department of Science and Art of the Committee of Council on Education, generally known as South Kensington examinations, give all students of science throughout the country an excellent opportunity for higher education in theoretical and applied science. There are annually awarded to such students seven Royal Exhibitions, tenable for three years, at the Royal College of Science, London, or the corresponding college in Dublin, 50*l.* a year being paid in addition to the free education. There are also awarded each year twenty-two National Scholarships, tenable for three years at either of the colleges, with free education, 30*s.* a week while the session lasts, and third-class railway-fare between the student's home and the college. Besides these six Free Studentships are awarded annually, which entitle the holders to free education for three years at either of the colleges. These important aids are granted upon the results of the examinations, and as these are open to everyone fulfilling the conditions, which, broadly, are regular attendance upon recognised evening or day classes, it is evident that those who attend these classes should have a good try for one or another of these. Mathematics must be one of the subjects chosen, and the others may comprise mechanics, sound, light, heat, magnetism, electricity, chemistry, and physiology. Full particulars in regard to the matter will be found in the "Directory of Science and Art Schools," obtainable for 6*d.* through any bookseller, or for that sum, *plus* postage, from Eyre & Spottiswoode, East Harding Street, Fleet Street, E.C.; John Menzies & Co., 12 Hanover Street, Edinburgh, and 90 West Nile Street, Glasgow; or Hodges, Figgis & Co. (Limited), 104 Grafton Street, Dublin.

The course of instruction at the

#### ROYAL COLLEGE OF SCIENCE

well illustrates the nature of a high-class scientific curriculum. In the first year all students are engaged in chemistry, physics, astronomical physics, and model and freehand drawing. In the second year students of mechanics,

physics, metallurgy, and mining take courses of instruction in mechanics and machine drawing and geology, as well as the special subject of the course, while the biology and geology men study these two subjects. In the third year chemistry students devote themselves solely to chemistry. The minimum cost of the curriculum is 110*l.* in fees.

In the Royal College of Science, Dublin, practically similar arrangements exist. The diploma is granted upon the results of the three years' course of training in the Faculties of Mining, Engineering, Manufactures, Physics, and Natural Science. The cost of the education is not quite so high.

#### TECHNICAL EDUCATION

is provided by the City and Guilds of London Institute, whose educational methods may be summarised in four sections:—

1. The encouragement of technical education throughout the whole country by annual examinations in seventy subjects, amongst them being alkali-manufacture, soap-manufacture, spirit-manufacture, the chemistry of coal-tar products, photography, and practically every industry pursued in this country.
2. The encouragement of art as applied to industry in the South London Technical Art School, 122-124 Kennington Park Road, S.E.
3. The education of workers and managers of chemical and other factories at the Technical College, Finsbury, Leonard Street, E.C. Here the students are trained for intermediate posts in day and evening classes.
4. The imparting of higher technical instruction in mechanics and mathematics, civil and electrical engineering, chemistry and physics, in the Central Technical College, Exhibition Road, S.W., where the curriculum is of three years' duration, and is modelled in some respects upon that pursued in the Royal College of Science.

Students may enter the Central Technical College at the age of 16. The examination is in mathematics and mechanics, chemistry, physics, and French or German. The fees amount to about 25*l.* a year, but the education imparted is practically equal to that given in the technical schools in Germany. In the Finsbury College the curriculum extends to two years, and the fees are proportionately lower.

#### UNIVERSITY COLLEGES

throughout the kingdom have courses of instruction in scientific subjects related to local industries and similar in character to those just described. The prospectuses of all local colleges should be consulted for details in respect to their courses. We append particulars of the fees and any special arrangements.

#### THE GERMAN PH.D.

Few English students now go to German universities for the sake of the Ph.D. degree only, but in order to get experience in methods peculiar to German universities, and especially to have the advantage of training under chemists of great repute. The London Matriculation examination certificate (or Matriculation examination of any other British university) gives students the *entrée*. They thereafter attendance at the classes for two years and the production of a piece of research work for a graduation-thesis and necessary examinations must be passed. A working knowledge of German is absolutely requisite.

#### METROPOLITAN SCIENCE SCHOOLS.

CENTRAL TECHNICAL COLLEGE, Exhibition Road, S.W.—The fees for the chemical course amount to 25*l.* a year. For prospectuses and information apply to the Dean.

TECHNICAL COLLEGE, Leonard Street, City Road, E.C.—The course extends to two years, the fees being 30*l.* Evening classes are held at moderate fees.

UNIVERSITY COLLEGE, Gower Street, W.C.—Faculty of science. The whole of the subjects for B.Sc. are taught, and the lecture fees are from 4*l.* 4*s.* to 7*l.* 7*s.* per course per subject. Practical chemistry, 26*l.* 5*s.* per session. Secretary, Mr. J. M. Horsburgh.

KING'S COLLEGE, Strand, W.C.—Fees are about the same as at University College. Evening classes are held.

CITY OF LONDON COLLEGE, White Street, Moorfields, E.C.—Evening classes in all science subjects; fees for members 4*s.*, for non-members 7*s.*, per course of lectures. Laboratory practice is 17*s.* and 20*s.*

Evening classes in science subjects suitable for the Minor and B.Sc. are held at the Polytechnic, Regent Street, W.; the Polytechnic Institute, Borough, S.E.; the People's Palace, Mile End Road, E.; the Northern Polytechnic, Holloway, N.; Technical College, Chelsea; the Carpenters' Institute, Stratford, E.; Goldsmiths' Company's Technical and Recreation Institute, New Cross, S.E.; Birkbeck Institute, Bream's Buildings, Chancery Lane, E.C. The education provided at some of these institutions is exceptionally good, and chemists' assistants are specially catered for in some of them.

#### PROVINCIAL SCIENCE SCHOOLS.

**ABERYSTWTH.**—*University College of Wales.*—Fees for the science course, 10l. per session. Registrar, Mr. T. Mortimer Green. Courses for the Minor and Major examinations are held here, the next course beginning on September 18.

**BANGOR.**—*University College of North Wales.*—Terms as at Aberystwith. Secretary and Registrar, Mr. J. E. Lloyd.

**BARROW-IN-FURNESS.**—*Technical Schools.*—Evening classes in science and technology.

**BELFAST.**—*Queen's College.*—There is a science division of the faculty of arts where instruction for science degrees of the Royal University Ireland can be had. The fee for each course generally 2l.

**BIRMINGHAM.**—*University.*—A full science course is conducted at this newly-constituted university.

**Municipal Technical School, Suffolk Street.**—Evening classes. Lecture fees 2s. 6d., laboratory 5s. per subject. Secretary, Mr. George Mellor.

**BRISTOL.**—*University College.*—The fees for the science classes are moderate. Secretary, Mr. James Rafter.

**CARDIFF.**—*University College of South Wales and Monmouthshire.*—Fees for science classes, 13l. 13s. per session. Registrar, Mr. J. A. Jenkins.

**CORK.**—*Queen's College.*—Similar to Belfast.

**DUBLIN.**—*Royal College of Science.*—The course of instruction is similar to that in the London Royal College, but the fees are lower. Government scholarships are also held here.

**DUNDEE.**—*University College.*—Botany, chemistry, and physics are taught in day classes, and chemical technology in the evening at the Technical Institute. Secretary, Mr. R. M. Kerr.

**EDINBURGH.**—*Heriot-Watt Institute, Chambers Street.*—Day and evening classes are held in all science subjects. Chemistry day lectures 3l. 3s. per session, including laboratory. Secretary, Mr. G. Brand.

**GALWAY.**—*Queen's College.*—Similar to Belfast, Queen's College.

**GLASGOW.**—*University.*—The fees in the faculty of science are 3l. 3s. or 4l. 4s. a session, except for laboratory instruction, which is 10l. 10s. in the chemical section.

*Technical College.*—Day and evening classes are held, and the fees are low. Secretary, H. F. Stockdale, 38 Bath Street, Glasgow.

**LEEDS.**—*Yorkshire College.*—The instruction is adapted to the Victoria University degrees and various diplomas. Evening and special classes are held. Fees moderate. Secretary, Mr. W. F. Husband, LL.B.

*Leeds Technical School.*—(See Pharmacy.)

**LIVERPOOL.**—*University College.*—Instruction as at Leeds College. Registrar, Chevalier Londini.

**MANCHESTER.**—*Owens College.*—The scientific courses at this college relate to pure science and the local industries. There are day and evening classes. Address communications to the Registrar.

**NEWCASTLE-UPON-TYNE.**—*Durham College of Science.*—Fees for curriculum of B.Sc. Durham 56l. Day and evening classes are held. Secretary, Mr. F. H. Pruett.

**NOTTINGHAM.**—*University College.*—Day science lecture fees 2l. 2s. per term. Evening classes are held. Secretary, Mr. P. H. Stevenson.

**PLYMOUTH.**—*Municipal Science, Art, and Technical Schools.*—Day and evening classes are held in most science subjects. Secretary, Mr. J. W. Byfield.

**SHEFFIELD.**—*University College.*—Day and evening lectures in most science subjects are given at low fees, also practical instruction.

## Prizes and Positions.

**THE** Pharmaceutical Society of Great Britain holds in trust a fund subscribed to commemorate Jacob Bell. Two Bell Scholarships are offered annually, the examinations for which take place on the third Tuesday in June in London, Edinburgh, and Manchester. Each scholarship is of the annual value of 30l. The Society gives Bell scholars free laboratory instruction and admission to the lectures at its School of Pharmacy, and there is a fund, given by Thomas Hyde Hills, from which the scholars receive 5l. worth of books. The scholarships are worth trying for. Candidates must be student-associates of the Society.

The Manchester Pharmaceutical Association Scholarship is similar in value, but the money is spent in pharmaceutical education, not necessarily in London. Candidates must have passed not less than three years with a chemist in Lancashire, Cheshire, or the High Peak Parliamentary division of Derbyshire.

The Redwood Scholarship and the Burroughs Scholarship are offered annually to pharmaceutical chemists who are desirous of obtaining advanced instruction in chemistry and chemical pharmacology with a view to conducting original investigations in these subjects. The scholars work in the Research Laboratory.

The Salters' Company also offer, through the Pharmaceutical Society of Great Britain, a "Fellowship" worth 100l. a year.

The Pharmaceutical Society are also trustees of the Hanbury Memorial Fund, which provides a gold medal every two years.

Pharmaceutical chemists are also entitled, under certain conditions, to compete for the Pereira medal, and student-associates may compete for the herbarium prize.

The Pharmaceutical Society of Ireland gives a gold medal and a silver medal to the two best candidates of the year at the Licence examination, a minimum of marks required being fixed.

#### ARMY COMPOUNDERS.

These appointments are held by non-commissioned officers in the Royal Army Medical Corps, who pass examinations in pharmacy, materia medica, posology, and similar subjects conducted by the medical officers. It is necessary to enlist in the corps, and work up to the position through the usual stages, which include drill, nursing, field-work, and the like. During the war in South Africa a number of temporary appointments of dispensers was made for the period of the war at the pay of 3s. 6d. a day, free rations, kit, and passage to and from South Africa (see *C. & D.*, December 23, 1899, page 1018).

#### DISPENSERS IN NAVAL HOSPITALS.

There are sixteen dispenserships in naval hospitals at home and abroad—four and a supernumerary at Haslar, three at Plymouth, two at Malta, and one each at Haulbowline, Chatham, Cape of Good Hope, Jamaica, Bermuda, and Hong-Kong. Entry into the service is by examination, conducted by the Civil Service Commissioners, but the candidates are first selected by the Medical Department of the Navy, Northumberland Avenue, W.C. Candidates must be chemists and druggists or pharmaceutical chemists, and be not less than 21, or more than 28, years old. The pay is 110l. a year to begin with, and rises by 5l. every two years to 130l., and then by 10l. every two years to 230l. Additional allowances of from 20l. to 40l. a year are made to dispensers in charge of stores. Free quarters are provided, and allowances made to those serving on foreign stations to meet the increased cost of living. Dispensers get a month's holiday yearly, and those on foreign stations may reserve their holiday from year to year so as to obtain a longer period of absence, but *locum tenens* have to be found "without putting the public to any expense in providing substitutes." Pensions are granted on retiring.

Vacancies are advertised in *THE CHEMIST AND DRUGGIST* when they occur. The examination (fee 10s.) is held in (1) pharmaceutical chemistry; (2) materia medica, including the British Pharmacopoeia and its appendix, poisons and their antidotes, dosage of remedies, and preparation of antiseptic solutions; (3) recognition of chemicals and drugs employed in medicine and (4) practical pharmacy, pre-

scription-reading, and detection of errors in doses; 3 and 4 are *visu-voce* subjects.

These appointments are in naval hospitals; in the navy itself the dispensing is done by the medical officer or by a bluejacket trained by him.

#### POOR-LAW DISPENSERS.

These are appointments made by guardians of the poor to dispensaries in metropolitan Unions and other Unions where special orders of the Local Government Board are in force. A candidate must be either (1) a Licentiate of the Society of Apothecaries, London; (2) an apothecary's assistant (under the Apothecaries Act); (3) a compounder of medicines in accordance with the Regulations for the Army Medical Staff Corps; (4) registered under the Pharmacy Act, 1868; or (5) an Irish pharmaceutical chemist.

Under a recent concession guardians are empowered to increase a dispenser's salary by 10% every fourth year until a maximum of 180% a year has been reached. Poor-law dispensers come under the provisions of the Poor-law Officers' Superannuation Act, 1896, and receive pensions on retirement through age or ill-health at rates laid down in the Act.

#### PRISON DISPENSERSHIPS

are open to chemists and druggists only. It is necessary to join as a warder and wear uniform. Residence is provided. The pay is similar to that given to Poor-law dispensers.

#### MEDICAL SERVICE.

In the army, navy, and in the Colonies and India, official positions are offered for competition amongst registered medical practitioners. Medical students can obtain all information concerning these at their schools.

#### OPTICAL EXAMINATIONS.

CHEMISTS who fit and sell spectacles may desire to test their knowledge of the subject by submitting to examination.

THE SPECTACLE-MAKERS' COMPANY, London, hold examinations once or twice a year. The next is to be held in November. There are two grades—the Full course and the Modified. The Modified examination can only be taken by masters who have been trading in their own name for at least seven years prior to January 1, 1900. The subjects of the examination are:—

**LIGHT.**—Elementary laws of light; simple laws of refraction; the index of refraction; refraction as applied to lenses and prisms; conjugate foci; formation of images; simple laws of reflection as applied to curved and plane mirrors.

**OPTICS RELATING TO VISION.**—General anatomy of the human eye. The course of light passing through the media of the eye alone and modified by spherical and cylindrical lenses and prisms. Hypermetropia; myopia; astigmatism; presbyopia. Instruments commonly used for determining the refraction of the eye:—Trial lenses—test types—astigmatic chart—the optometer. The principle of the ophthalmoscope. The principle of, and various forms of spectacles.

**PRACTICAL WORK IN VISUAL OPTICS.**—Testing a plane surface; measurement of focal length of spherical, cylindrical, and compound lenses; use of the spherometer or lens meter; measurement of conjugate foci; determination of the axis of a cylinder, and the angle of deviation of a prism; analysis and neutralisation of spherical, cylindrical, and compound lenses, and lenses combined with prisms; transposing; centring and adjustment of spectacle lenses and frames; face-measurement for spectacles. Knowledge of the materials and of the workmanship employed in the manufacture of lenses and frames; use of pebble-tester. Reading of oculists' prescriptions; giving out orders for lenses and frames.

Candidates who take the full examination are examined, as well, in elementary mathematics, heat, practical work with optical and mathematical instruments, and in one of the following subjects:—The photographic camera, the microscope, nautical and surveying instruments, and projection instruments.

The full examination can be taken in two parts. The examination-fees are 3*l.* 5*s.* to 5*l.* 5*s.*, according to whether the candidate joins the Company by patrimony, servitude, or redemption. Further particulars can be had from Col. T. Davies Sewell, Guildhall, E.C.

THE BRITISH OPTICAL ASSOCIATION, 17 Shaftesbury Avenue, W., have also an examination-scheme. In the B.O.A. scheme there are three grades of examination—the

optic, dioptric, and ophthalmometric, for which the fees are 1*½*, three, and five guineas. The optic grade has to be passed by the candidate before he can pass to the higher grades. The examinations are held about three times yearly. The Secretary is Mr. J. H. Sutcliffe.

#### OPTICAL INSTRUCTION.

THE NORTHAMPTON INSTITUTE, Clerkenwell, E.C.—At this institute a course of optical lectures and practical instruction is held. The course begins in October and lasts till June of the following year. The fees amount to 15*s.* Particulars can be had from Dr. R. Mullineux Walmsley, the Principal.

MR. LIONEL LAURANCE, 1 Vernon Place, W.C., conducts private classes in visual optics in London and the country. The fee for the course is 7*l.* 7*s.* Correspondence and evening classes are held, and personal courses are conducted at any centre from which a sufficient number of candidates apply.

THE ANGLO-AMERICAN OPTICAL COMPANY, 94 Hatton Garden, E.C., conduct a school of optics. The course is intended to fit students for the optical examinations of the S.M.C. and B.O.A. The fee is 3*l.* 3*s.* Correspondence classes are also held.

### College Notes.

**SOUTH LONDON SCHOOL OF PHARMACY.**—Mr. D. Kingan, Ph.C., having ceased to occupy the position of Lecturer on Materia Medica and Teacher of Practical Pharmacy in this school, Mr. W. F. Mawer, Ph.C., has been appointed to the lectureship, while the Pharmaceutical Laboratory has been placed in the care of Mr. F. Armstrong.

**WEST OF SCOTLAND COLLEGE OF PHARMACY.**—Messrs. T. S. Barrie and T. Maben have dissolved partnership by mutual consent. Mr. Maben retires at the end of this month. Mr. Barrie will carry on the college, assisted by Mr. James Thomson, M.P.S., and Mr. Thomas Macdougall, M.A.

ON August 30, the chemical-works of Messrs. Ellisson & Mitchell were visited by the students of the Sheffield College of Pharmacy and their principal (Mr. J. W. J. Turner). The processes of separating some of the products obtainable from coal-tar oil were witnessed, such as the preparation of benzene, toluene, from the light naphtha. The separation of pyridine, phenol, cresol, and anthracene, were found interesting. The plant of stills, boilers, fractionating column, and laboratory appliances and tests were explained by Mr. Mitchell. The students then proceeded by conveyance to Maltby, where tea was obtained. The return journey to Sheffield was *via* Conisbrough, arriving at 8 P.M., after a most enjoyable outing.

### Personalities.

MR. J. W. HEAN, pharmaceutical chemist, Christchurch, N.Z., is now paying a visit to this country, and will be in London for a few weeks.

WE had a call last week from Mr. John Champion, pharmaceutical chemist, Melbourne, Victoria, who is to spend the next two or three months in England and France. Mr. Champion is at present in London.

MR. RICHARD SCHWEICKHARDT, pharmaceutical chemist, of the firm of R. & F. Schweickhardt, wholesale druggists, perfumers, and sundriesmen, St. Louis, U.S.A., was in London this week, and sailed for America on Thursday.

MR. W. F. POCOCK, late President of the Cape Pharmacy Board, home on holiday, has been visiting Northumberland, and staying at Morpeth, with Mr. F. E. Schofield, ex-President of the Newcastle and District Chemists' Association. Twenty-three years ago these two gentlemen occupied the same rooms in Methley Street when students at the South London School of Pharmacy. Possessing many tastes in common they have kept in constant touch with each other, and by a coincidence were mayors of their respective towns at the same time. Before returning south Mr. Pocock visited another fellow-student, Mr. Leslie Newbiggin, at Alnwick.

## Pharmaceutical Chemistry of the New German Pharmacopœia.

By H. HELBIG, F.C.S., and F. W. PASSMORE, Ph.D.

### III.

*Extractum Hydrastis Fluidum*.—The alkaloidal value of this preparation is determined gravimetrically, in accordance with the following directions:—

Fifteen grammes fluid extract is evaporated in a weighed dish on the water-bath to about 5 grammes, the residue rinsed into a glass bottle with 10 c.c. water, 10 grammes petroleum spirit, 50 grammes ether, and 5 grammes liq. ammoniæ added, and the mixture allowed to stand, with frequent violent shaking, for one hour. From the clear ethereal solution 50 grammes are filtered through a dry filter into a separatory funnel, 10 c.c. of a mixture of 1 part hydrochloric acid and 4 parts water added, and the mixture thoroughly shaken for a few minutes. After standing, the clear acid liquid is run into a glass bottle, the ether again shaken twice with 5 c.c. water to which a few drops of hydrochloric acid are added, and these extracts combined with the first. The acid liquor is then supersaturated with ammonia, 50 grammes ether added, and the mixture allowed to stand one hour, with frequent violent shakings; 40 grammes of the clear ethereal solution is filtered through a dry filter into a weighed dry flask, the ether distilled off, the residue dried at 100° C., and weighed when cold. The residue shall weigh at least 0.2 gramme.

As a qualitative test it is required that the above residue, dissolved in 10 c.c. water and a few drops dilute sulphuric acid, with 5 c.c. potassium-permanganate solution added, shall, when shaken until decolorised, exhibit a blue fluorescence. Further, one volume of the fluid extract mixed with two volumes of dilute sulphuric acid shall deposit after a short time a copious mass of yellow crystals.

*Extractum Hyoscyami*, which, like the German ext. belladonnæ, is a green extract, must have its alkaloidal value determined in like manner to the latter. Only 10 c.c., instead of 20 c.c., centinormal hydrochloric acid is, however, used for the extraction of the chloroform-ether solution, and for the neutralisation of the acid solution "not more than 6.5 c.c. centinormal caustic-potash solution shall be required." As in the case of the belladonna extract also no maximum alkaloidal value is fixed.

*Extractum Opii*.—The morphine is determined by the following volumetric method, of which we give the full text, as many workers will be interested in ascertaining whether a thoroughly reliable volumetric method has been elaborated:—

Three grammes of opium extract dissolved in 40 grammes water is mixed with 2 grammes sodium-salicylate solution (1 to 2), and after thorough shaking 30 grammes of the clear liquid is filtered through a dry folded filter of 10 centimetres diameter into a dry flask. This filtrate is mixed with 10 grammes ether, and to it added 5 grammes of a mixture of 17 grammes liq. ammoniæ and 83 grammes water. The flask is then closed, and its contents shaken vigorously for ten minutes and allowed to stand twenty-four hours. Thereupon the ethereal layer is poured as completely as possible upon a smooth filter of 8 centimetres diameter, 10 grammes ether added to the aqueous liquor, the mixture agitated a few moments, and the ethereal layer again poured on the filter. After allowing the ethereal liquid to run through the filter the aqueous solution is poured on without disturbing the crystals adhering to the sides of the flask, and the filter and the flask rinsed thrice with 5 c.c. water saturated with ether. After the flask has been well drained and the filter completely so, the morphine crystals are dried and dissolved in 25 c.c. decinormal hydrochloric acid, the solution poured into a 100-c.c. bottle, the filter and flask carefully washed with water, and the solution finally diluted to 100 c.c. Of this solution 50 c.c. is measured into a white-glass bottle of about 200 c.c. capacity, 50 c.c. water added, and so much ether that a layer of ether about 1 centimetre deep is obtained. After addition of 5 drops iodo-eosin solution, decinormal caustic-potash solution is dropped in, the mixture being thoroughly shaken after each addition, until the lower aqueous layer has acquired a pale-red colour. Not more than 6.5 c.c. and not less than 5.5 c.c. potash solution shall be required.

*Extractum Strychni*.—The total alkaloids only are estimated according to the method already described under Belladonna Extract. One gramme of the extract is taken for

analysis, and the chloroform-ether solution (50 grammes) is extracted with 50 c.c. instead of 20 c.c. centinormal hydrochloric acid, which, together with the washings, is titrated with centinormal caustic-potash solution, of which not more than 18 c.c. shall be required for neutralisation, using iodo-eosine as indicator.

*Ferrum Reductum*.—The Pharmacopœia requires now, as before, at least 90 per cent. of metallic iron, which shall be determined by its combining capacity with iodine in the following manner:—

0.3 gramme finely-powdered reduced iron is mixed with 10 c.c. potassium iodide solution, and to the mixture, which is cooled and constantly shaken, 1.5 gramme powdered iodine gradually added. As soon as both iron and iodine have completely dissolved, the liquid is diluted with water to 100 c.c. and allowed to deposit. Thereupon 50 c.c. of the clear solution is measured out and titrated with decinormal sodium-hyposulphite solution; not more than 10.3 c.c. decinormal hyposulphite solution shall be required to destroy the free iodine.

The limit of arsenical contamination is fixed by its detection with stannous chloride. If 0.2 gramme reduced iron is mixed with 0.2 gramme potassium chlorate and 2 c.c. hydrochloric acid, warmed until the chlorine has been driven off, and the solution then filtered, 1 c.c. of the filtrate, mixed with 3 c.c. stannous-chloride solution shall not show any dark coloration within one hour.

*Ferrum Sulfuricum Siccum*.—The loss in weight of the ferrous sulphate employed for the preparation of the dried salt is fixed at 35 to 35 per cent. The iron contents are determined as follows:—

0.2 gramme dried ferrous sulphate is dissolved in 10 c.c. dilute sulphuric acid, 5-per-mille permanganate-of-potassium solution added until a slight reddening appears, and after decolorisation is effected, if necessary, with a few drops of alcohol, 2 grammes potassium iodide is added. This mixture is allowed to stand for one hour at ordinary temperature in a closed vessel, and then titrated with decinormal sodium-hyposulphite solution; at least 10.8 c.c. decinormal hyposulphite solution shall be required to combine the liberated iodine.

It may be mentioned that the German pharmacopœial authorities adopt the potassium-iodide and sodium-hyposulphite method for the estimation of iron generally in place of the bichromate method.

*Formaldehydum Solution*.—The importance that this article has gained as a preservative and antiseptic agent has been recognised by the Pharmacopœia authorities, and, as it will no doubt receive official attention in this country, it may be well to point out some of the principal characteristics upon which weight must be laid in defining formaldehyde. Owing to its tendency to polymerise to paraformic aldehyde when the aqueous solution is too concentrated, it is not advisable to stock a solution above 35 or 40 per cent. strength. The percentage of formic aldehyde in the clear solution is most conveniently ascertained by preparing its ammonia compound, hexamethylene tetramine, which may either be evaporated to dryness and weighed, or titrated in solution with standard acid. The solution should be neutral or contain a trace only of formic acid, and also be free from methyl alcohol, which, under certain conditions, forms an inert compound, methylal, with the aldehyde. The absence of any appreciable distillate below 66° C. is evidence of not more than negligible quantities of methyl alcohol. The G.P. requires a 35-per-cent. solution, sp. gr. 1.079 to 1.081, miscible with water and alcohol in all proportions, immiscible with ether. It is identified by leaving a white amorphous residue, insoluble in water, on evaporation alone on a water-bath, or a white crystalline residue very soluble in water when made strongly alkaline with ammonia prior to evaporation. The solution also reduces ammoniacal silver-nitrate solution in the cold and alkaline copper-tartrate solution on warming. It shall not be affected by silver-nitrate solution, nor by barium-nitrate solution, nor by sulphuretted hydrogen when diluted with four volumes of water; and 1 c.c. formic-aldehyde solution to which a drop of normal caustic-potash solution is added shall not have an acid reaction. Its quantitative estimation is directed to be made as follows:—

Five c.c. formic-aldehyde solution is mixed with 20 c.c. water and 10 c.c. liq. ammoniæ, and the mixture allowed to stand in a closed vessel for one hour; after addition of 20 c.c. normal hydrochloric acid and a few drops of rosolic-acid solution, at least 4 c.c. normal caustic-potash solution shall be required to produce a rose colour,

## Legal Reports.

### High Court Case.

#### ACTION AND COUNTER-ACTION.

IN the Court of Session, Edinburgh, Lord Pearson has this week issued judgment in counter-actions in which Thomas Hardie, chemical-manufacturer, Ayr, sought to have Daniel Clarke, sometime chemical-manufacturer, Ayr, a co-director of Clarke's Ammonia Company (Limited), compelled to fulfil an agreement between them whereby Clarke was to join with him in getting him registered as the holder of 370 shares of the company, purchased by him from Clarke, and in registering the transfer of the shares to him, and also to have Clarke compelled to hand over to him all the cash, documents, and other property of the company, and to sign a cheque in his favour for any balance at the company's credit in bank. Hardie further sought to have Clarke interdicted from engaging directly or indirectly in any business in Scotland which would have interests opposed to those of the company for at least ten years from April 7, 1896, and payment was asked of 500*l.* for alleged breach of agreement. In the counter-action Clarke sought to have it declared that Hardie had failed to implement his part of the agreement, and that in consequence Clarke had become the purchaser thereunder, and that, in addition to his being owner of the 370 shares, he was now entitled to receive from Hardie the transfer of 430 shares in the company which, under the agreement, he was bound to purchase from Hardie. He also sought to have it declared that Hardie was bound to join with him in registering him as holder of the 430 shares, and to have Hardie ordered to account for his intrusions with the funds belonging to the company since August 8, 1896, or pay him 1,000*l.* Interdict was also asked, or payment of 500*l.* as damages. Lord Pearson has decided in favour of Hardie, and has also granted interdict, and awarded Hardie damages of 1*l.*, and ordered the case to be enrolled for further procedure. His Lordship has further assoilzied Hardie from the conclusions of the action by Clarke, and granted him expenses in both actions.

### Merchandise-marks Act.

#### USING MARKED BOTTLES.

JAMES HARRISON, mineral-water manufacturer, of Salford, has been fined 10*l.* and costs by the local Stipendiary for having applied a false trade-name to certain bottles belonging to the Manchester, Salford, and District Mineral-water Trade Protection Association. Out of four dozen bottles of herb-beer which he had supplied to a customer as his own, sixteen bore names other than that of "Harrison."

### Factory Acts.

#### COULD NOT WAIT.

AT Fakenham on August 30, John A. Everson, mineral-water manufacturer, of Harleston, was summoned for employing six youths after 2 P.M. on a Saturday afternoon, and pleaded that the article they were manufacturing was perishable. A fine of 5*s.* and 11*s.* costs was inflicted in each case, a total penalty of 4*l.* 16*s.*

### Sale of Food and Drugs Act.

#### THE PHARMACOPOEIA AS THE STANDARD.

THERE were four Hackney retailers before Mr. Mead at North London Police Court on Friday, August 31, summoned by the Hackney Vestry for selling camphorated oil more or less deficient in the principal element. These were Mr. H. B. Crampton, of 271 Well Street, whose sample was stated to be 38 per cent. deficient; Mr. G. Cashford, of 272 Mare Street, 8 per cent. deficient; Mr. A. Dolling, chemist and druggist, 57 Lower Clapton Road, 24 per cent. deficient; and Mr. Edmund Goodrich, of 80 Well Street, Hackney, whose sample was certified by Mr. Leo Taylor, the public analyst of Hackney, to be 63 per cent. deficient of the active principle.

Mr. H. T. Tiddeman represented the Hackney Vestry, and Mr. Beck defended.

Mr. Crampton's case was first taken, and he pleaded guilty to selling the oil, but he did not quite know what it contained.

Proof was given of the purchase and of dividing the threepennyworth so purchased into three equal parts—one for public analysis, one for the defendant, and one in reserve. The analyst's certificate was also put in to show the deficiency of camphor to the extent of 38 per cent.

Mr. Mead (Magistrate): I see by the certificate that the proportion of camphor in the sample was 13.2 per cent. instead of 21.41 per cent. What have you to say, Mr. Crampton?

The defendant: I was asked for camphorated oil. I took that to mean oil impregnated with camphor, and that is what I sold. I know of no fixed standard as to quantity.

Mr. Mead: The standard adopted by the analyst is that prescribed in the British Pharmacopœia?

Mr. Tiddeman: That is so.

Mr. Mead: By what authority is the British Pharmacopœia set up as a standard?

Mr. Tiddeman: I am unable to refer you to any authority now, but it has always been the practice. Perhaps Mr. Leo Taylor, the public analyst, who is present, will be able to give your Worship more information.

Mr. Mead: Yes, I should like to hear what he has to say.

Mr. Beck (who was instructed by the Chemists' Defence Association in respect to the case of Mr. Dolling) here announced that he appeared in the other cases, and asked the Magistrate to reserve his decision until all had been heard.

Mr. Mead: Yes, I shall be glad to have your assistance in the matter. This case may stand back.

Mr. Beck: All the cases are similar. But if your Worship will take the case of Mr. Dolling all the facts can be brought out, and I may have other objections which would be applicable to all the cases.

Mr. Dolling's case was next called. His sample showed a 24-per-cent. deficiency according to the standard stated.

He pleaded not guilty.

Mr. Mead: As I gather that your points all relate to law, Mr. Beck, Mr. Tiddeman may lead the witnesses in order to save time.

A little girl was called who had been sent to make the purchase by the inspector, and the latter gave details as to separating the sample. The analyst's certificate was also put in.

Mr. Tiddeman: That is my case. The analyst is here, and at the service of the other side if necessary.

Mr. Mead: If necessary, I will call him myself.

Mr. Beck: I should like to have the analyst in the box. But I have a technical objection to the certificate, and I think I had better deal with that first. The Act says that the certificate is to be in the form set out in the schedule, and the analyst has to adapt that form to the particulars of each case. I submit that he should say "I am of opinion that the sample contains the parts as under," &c. This certificate does not give the complete result of the analysis. It simply names the deficiency of the active principle. I submit that he must give full details, and for this reason. In other cases of this class we have heard of cotton-seed oil, or mineral oil, being used in this compound, which should be made of olive oil and camphor. This certificate does not show what the character of the oil was. I therefore submit that it is bad on the face of it.

Mr. Mead: That seems to me to be utterly immaterial. If the essential ingredient is wrong it does not make any difference what the rest of the compound may consist of.

Mr. Beck quoted a judgment of Mr. Justice Hawkins and Mr. Justice Kennedy, in which it was held that the analyst must give full details of the result of his analysis.

Mr. Mead said he would like to hear the public analyst.

Mr. Leo Taylor, F.I.C., member of the Society of Public Analysts, and public analyst for Hackney, said he received the sample on July 23. He analysed it, and according to the standard of the British Pharmacopœia, he found that it was deficient in camphor to the extent of 24 per cent.

In reply to Mr. Beck, the witness said it was a fact that camphorated oil did not appear in the British Pharmacopœia

until the 1898 edition. It had previously been known as liniment of camphor, but as such it would only be asked for by professional men.

Mr. Beck questioned the witness as to the mode of analysis; and he replied that he weighed the sample, and found that it was  $\frac{1}{5}$  oz. He then placed the sample in a hot oven, and drew off the camphor, and by weighing the oil which was left he estimated the deficiency.

By Mr. Mead: I assume that all that was lost was camphor.

Mr. Mead: But some of the oil might evaporate also?

Mr. Taylor: I think not. But if it did it would be in favour of the defendant.

Mr. Beck: Is it not a fact that camphor is very volatile?

Mr. Taylor: Camphor is very volatile in its pure state, but not when mixed with the oil.

By Mr. Beck: I know of other methods of analysis, but consider mine the best. I have exposed camphorated oil in a flat dish on the window-ledge of my laboratory, and found that it only lost 14 per cent. after exposure for eight days. When pure, camphor evaporates at a very low temperature.

Mr. Beck: Can you tell us what the oil was?

Mr. Taylor: I tested the oil, but as I had only  $\frac{1}{5}$  oz. left I was not able to form any very definite opinion. I gave the defendant the benefit of the doubt.

Mr. Beck: But had you any doubt that it was not olive oil?

Mr. Taylor: I satisfied myself that it was neither cotton-seed oil nor mineral oil.

Mr. Beck: But you have not stated that in your certificate.

Mr. Taylor: No; it is not necessary to state everything on my certificate. I mentioned the essential facts.

Mr. Beck: It is necessary for us to know how much oil the sample contained.

Mr. Taylor: Of course, it is quite possible that the bulk had been diluted by the addition of oil.

Mr. Beck: But you admit that the ingredients were genuine?

Mr. Taylor: Yes, the ingredients were genuine; but the value of the article as a medicament was minimised. There is a difference in the cost of oil and camphor, that of the latter is very much more; so that camphorated oil up to the standard of the British Pharmacopœia would be of greater value than this was.

Mr. Mead: Do you know of any decision by which the British Pharmacopœia is made the standard?

Mr. Taylor: No, I do not.

Mr. Mead: Who are the publishers of the British Pharmacopœia?

Mr. Taylor: It is published by the Medical Council, and that Council, under the Act of 1862, have the sole right of publishing it. The preface commences as follows:—"By the Medical Act, 1858, section 54, the General Council shall cause to be published under their direction a book containing a list of medicines and compounds, and the manner of preparing them, together with the true weights and measures by which they shall be prepared and made, and containing such other matters and things relating thereto as the General Council shall think fit, to be called the British Pharmacopœia, and the General Council shall cause to be altered, amended, and republished such Pharmacopœia as often as they may deem it necessary." The Act of 1862 gives the Medical Council the sole right of publishing the British Pharmacopœia.

Mr. Mead looked at the law bearing on the subject, and said that he was inclined to hold that the British Pharmacopœia must be looked upon as the standard. Of course he would hear what was to be said against it. He also considered that the certificate as put in was sufficient, as it stated the important and material facts.

Mr. Beck: At the most they only say we had too much oil.

Mr. Mead: I shall convict, but will grant you a case on the question as to whether the British Pharmacopœia is to be adopted as the standard, if you like. Apart from the Pharmacopœia there is no standard on which I could say that the sample is adulterated; and Mr. Taylor knows of no other standard.

Mr. Beck: If your Worship will grant a case in those words, I will take it, and undertake that it shall be carried through.

Mr. Mead: Then I will formally decide that the British Pharmacopœia is the standard which I must accept. The whole of the case rests on the question whether or no the Pharmacopœia is the standard.

Mr. Beck: And will you add to the case the other point with reference to the validity of the certificate?

Mr. Mead: Yes, if you desire it.

Mr. Beck: The Food and Drugs Act of 1875 was drafted with a provision making the British Pharmacopœia the standard, but it was eliminated from the Act before it became law.

Mr. Mead: Which seems to indicate that it was thought unnecessary.

Mr. Beck: I do not think that was the reason. There was a deal of agitation at the time, and a strong feeling that the Pharmacopœia was not as correct as it might be.

Mr. Mead: You may take a case, but I must formally convict—40s., to include costs.

Mr. Beck: I am very sorry that your Worship thinks it necessary to convict.

Mr. Mead: It is subject to the case, of course.

Mr. Beck: Yes; but in this case there are many mitigating circumstances.

Mr. Mead: It is necessary that I should impose a penalty. But 20s. will suit you, won't it, Mr. Tiddeman?

Mr. Tiddeman: I leave the matter entirely with your Worship.

Mr. Mead: Very well—20s., to include costs, and subject to a case for the High Court. The other summonses will be adjourned *sine die*.

Mr. Cashford said he would like to have his case disposed of at once, but Mr. Mead said: You had better allow your summons to stand over with the rest. You may not have to come again.

#### BAKING-POWDER.

At Kingston-on-Thames on August 29, Clara Peel was fined 12s., including costs, in each case, for selling baking-powder containing 18 per cent. of alum and egg-powder adulterated with 20 per cent. of alum.

At Hitchin on August 28, Elizabeth Smith, Breachwood Green, was summoned for selling baking-powder containing 11.5 per cent. of alum. The Bench dismissed the case, expressing the opinion that retailers were victimised by manufacturers.

### Bankruptcies and Failures.

*Re* FRANCIS LOUGH BRADFORD (trading as F. Bradford & Sons), 1 Churchill Street, and 15 George Street, Newcastle-on-Tyne, Mineral-water Manufacturers.

AMONGST the creditors are:—

	£	s.	d.
Duckworth & Co., Manchester	...	...	16 7 3

*Re* CHARLES HENRY BOOTH, late 394 King's Road, Chelsea, Chemist and Druggist.

THE first meeting of creditors was held at the London Bankruptcy Court on August 30. The debtor states that he commenced trading in 1893, purchasing a business carried on at 41 Moorgate Street for 600*l*. To do this he borrowed 800*l*. from relatives, leaving him with 300*l*. capital. About 1894 he sold this business for 700*l*. cash, and from the latter date until the beginning of 1896 he worked as an assistant. He then took a business at 394 King's Road, Chelsea, giving 300*l*. for it, and remained there until May last, when it was sold for 700*l*. The debtor states he received this amount, and paid away 250*l*. or 300*l*. to creditors, and the balance he has used in living and for betting purposes, having incurred heavy betting losses. About the end of 1898 he bought a business at 31 High Street, Sutton, which he sold at a loss about eight months afterwards. In June last a meeting of his creditors was held, and 10s. in the pound was offered, but no arrangement was made. The debtor attributes his insolvency to law-costs, ill-health, losses in connection with the business at Sutton, excessive interest on borrowed money, and losses by betting. No accounts were filed, but the liabilities are estimated at 600*l*. or 700*l*., the only asset being furniture 25*l*.

The matter will be wound up in bankruptcy by the Official Receiver as trustee. The following are creditors:—

	£	s.	d.
Baiss Brothers & Stevenson ... ..	46	11	3
Booth, M. E. ... ..	106	9	0
Camwal (Limited) ... ..	22	12	11
Corbyn, Stacey & Co. (Limited) ... ..	15	15	1
Davy, Hill & Son, Yates & Hicks ... ..	26	12	10
Duncan, Flockhart & Co. ... ..	14	8	8
Edwards Brothers... ..	10	11	7
Goertz, C. P. ... ..	13	2	6
Maw, S., Son & Thompson... ..	20	7	6
Newbery, F., & Sons ... ..	10	0	4
Sanger, J., & Sons ... ..	33	17	3
Timpson, J., & Co. (Limited) ... ..	10	0	0

*Re* PAUL VILLAIN, 264 Goswell Road, London, Perfumerie Elegante.

THE first meeting of the creditors was held on August 5, at the London Bankruptcy Court. The debtor has filed accounts showing liabilities 1,116*l.* 16*s.* 9*d.*, and assets 75*l.* He states that he was formerly in business at Lisle, but came to this country in 1894, and for a time acted as manager for a firm of soap manufacturers at Warrington. He subsequently held similar appointments in London, and in June, 1899, he started business on his own account at Goswell Road. He was in debt when he commenced, and obtained a 200*l.* stock of perfumes on credit for his wife, who carries on a similar business on her own account. The Goswell Road business had been unsuccessful throughout, and resulted in his present difficulties. In May last he provisionally protected a patent, consisting of an invention for the reproduction of photographs in soap of our prominent generals serving in South Africa. In order to develop the patent he promoted, in June last, the Patriotic Soap Company (Limited), with a nominal capital of 500*l.*, and as vendor he was to receive 150*l.* in fully-paid up shares, but in the absence of a complete specification they had not yet been allotted to him. He has assigned his interest in the shares to a friend, who provided the money for the preliminary expenses of the promotion, but he still holds the position of managing director of the company. No offer being submitted the case was left in the hands of the Official Receiver to be wound up in the ordinary course of bankruptcy.

*Re* JAMES BOND, Fahan, co. Donegal, Iodine-manufacturer.

THIS debtor was examined at the Dublin Bankruptcy Court on September 4, before Mr. Justice Barton. Mr. W. G. Jefferson, B.L., appeared for the assignees, and Mr. Lett for the bankrupt, who stated that he started business with a capital of 250*l.*, advanced to him by the Irish Congested Districts Board. This Board subsequently gave him a further advance of 200*l.* He did not keep books of account. As each transaction was closed, the slips of paper with reference to it were destroyed or thrown away. He admitted that he had since his failure received a sum of 50*l.* in payment for iodine, which he had forwarded to Glasgow. Of that amount he had spent 16*l.* in buying kelp, which was still in his store unmanufactured. He had paid 10*l.* to his solicitor, and he had a family of nine, the support of which accounted for the balance. On further examination the bankrupt admitted that he got a further sum of 50*l.* about ten days ago. That money was at home safely locked up in a box. He would undertake to send it to the assignees. The examination having concluded, Mr. Justice Barton directed a messenger of the Court to accompany the bankrupt to Fahan to obtain possession of the money, and also of any books or documents in bankrupt's custody.

*Re* WILLIAM THOMAS SINGLETON, Managing Director of "Vendors (Limited)," Lytham.

THE public examination of this debtor took place at the Manchester Bankruptcy Court on September 3. Debtor denied all liability in respect of a proof for 62,000*l.* by the liquidator of the "Natural Epsom Salts Syndicate (Limited)." He also denied that he was the promoter of the company, although he admitted that he acted as nominee for the promoter.

The Official Receiver said there was practically no difference, and he proceeded to read a report justifying the proof. The examination was adjourned.

**OPIUM-SMUGGLING IN BURMAH.**—In spite of all restrictions, opium continues to be smuggled into Burmah in large quantities. The number of prosecutions under the Opium Act in Rangoon has steadily risen from 77 in 1896 to 149 in 1899. The police believe that scarcely a vessel arrives in Rangoon from Calcutta without from six to fifteen balls on board.

## Gazette.

### Partnerships Dissolved.

**Griggs, W. A., and Whitehouse, W. M.,** under the style of Griggs & Whitehouse, Leicester, physicians and surgeons.

**Taylor, J., and Edwards, L.,** under the style of John Taylor & Co., Prospect Works, King Henry's Walk, Dalston, N.E., glass bottle and stopper manufacturers.

### The Bankruptcy Acts, 1883 and 1890.

#### RECEIVING ORDER.

**Lloyd, Owen,** Blaenau Ffestiniog, Merionethshire, mineral-water manufacturer.

#### ADJUDICATION.

**Savill, Leonard Webb** (trading as Ados Scotch Soda-works Company, also trading as Gibbs & Atkins), South Side, London Fields, N.E., and Lawnside, Southgate Green, N., and Pritchard's Road, Hackney, N.E., soda-manufacturer.

*From the "Scottish Law Courts Record."*

#### DIVIDEND PAYABLE.

**Townsend, R. and A. W.,** lately 128 Bishop Street, Port Dundas, Glasgow, chemical-manufacturers, &c. Equalising, and second and final, at Reid & Mairs, 40 St. Vincent Street, Glasgow, chartered accountants, on October 15.

#### WINDING-UP OF PUBLIC COMPANY.

**Scottish Oil and Chemical Company (Limited).**—Resolved, August 22, That the company be wound up voluntarily. David Strathie, 162 St. Vincent Street, Glasgow, chartered accountant, liquidator.

## New Companies & Company News.

**PRODUCE TRADERS (LIMITED).**—Capital 5,000*l.*, in 1*l.* shares. Objects:—To carry on the business of dealers in condiments, foodstuffs, chemicals, drugs, oil, &c.

**ALKALI DEVELOPMENT COMPANY (LIMITED).**—Capital 4,000*l.*, in 1*l.* shares. Objects: To adopt an agreement with A. McNair Braud, and to carry on the business of manufacturers of and dealers in caustic soda and by-products thereof, chemical manufacturers, &c.

**OLEUMEXTRACTOR COMPANY (LIMITED).**—Capital 3,600*l.*, in 10*l.* shares. Objects:—To acquire an invention for extracting fatty and oleaginous matter from various substances, to adopt an agreement with J. Carstairs, and to carry on the business of oil and grease extractors, chemical manufacturers, manufacturers of resinous substances, essential oils, and balsams, &c.

**SHORT & MASON (LIMITED).**—Capital 27,500*l.*, in 1*l.* shares. Objects: To adopt agreements with G. E. Taylor and Taylor Brothers Company, and to carry on the business of opticians, spectacle-makers, electrical, chemical, scientific, and surgical instrument makers, &c. The first directors are: T. W. Short, W. H. Walker, H. J. Winn, G. E. Taylor, and E. Bausch. Registered office, 40 Hatton Garden, E.C.

**CROSS'S CHEMICAL COMPANY (LIMITED).**—Registered in Edinburgh. Capital 25,000*l.*, in 1*l.* shares. Objects:—To carry on the business of merchants, chemical manufacturers, coal and iron masters, brokers, agents, &c. The first subscribers are:—P. A. Munro Cross, Camelon Works, Falkirk, acid manufacturer; Thomas Thornley, Camelon Works, Falkirk, acid manufacturer; Alexander Cross, 19 Hope Street, Glasgow, M.P.; William Cross, 19 Hope Street, Glasgow, clerk; Malcolm Cross, 7 Royal Bank Place, Glasgow, merchant; W. Borland, 142 St. Vincent Street, Glasgow, writer; and J. Campbell, 142 St. Vincent Street, Glasgow, writer. The first directors are:—A. Cross and P. A. Munro Cross. Qualification, 500 shares. Remuneration as fixed by the company.

**BERTIE-SMITH & Co. (LIMITED).**—The prospectus of this company, which is incorporated under the Indian Companies Act, 1882, will be found on reference to our advertisement pages. Subscriptions are invited for 3,000 6-per-cent. cumulative preference shares of 10*l.* each. The company has taken over the Bombay and Delhi businesses carried on for many years by Messrs. Bertie-Smith & Co., wholesale drug-merchants and East India agents. Messrs. Samuel Lambert, 132 Fenchurch Street, E.C., are the London agents of the company.

**PRICE'S PATENT CANDLE COMPANY (LIMITED).**—The directors of this company have issued a statement of profit and loss account, to be submitted to an extraordinary meeting to be held on September 7. The report states that the balance of profit in hand shown by the accounts submitted in March was 71,871*l.*, from which has been deducted a dividend of 1*l.* per share paid March 10, 37,500*l.*; reserve fund, 15,000*l.*; on account of depreciation on fixed properties, 12,500*l.*, leaving a balance of 6,871*l.* The profit of the six months to June 30 last was 43,959*l.*, from which deduct income-tax 1,696*l.*, leaving 42,262*l.* The dividend to be declared at the meeting (18*s.* per share) will absorb 33,750*l.*, leaving 15,383*l.* to be carried forward.

**LAWES' CHEMICAL-MANURE COMPANY (LIMITED).**—The report of the directors for the year ended June 30 states that although the trade in chemical-manures during the past season has been prejudicially affected by the weather and the low prices obtainable for all kinds of agricultural produce, there has been an increase in the company's sales, both of manures and sheep-dips, with a corresponding increase in profit. The result of the year's trading shows that, after adding the amount brought forward, and deducting interest on debentures, there is an available balance of 23,910*l.*, which the directors propose to appropriate as follows:—To payment of a dividend of 7 per cent. on the preference shares, 5,372*l.*; 10*s.* per share on the ordinary shares, with interest at 5 per cent., for prepayment on fully paid-up shares, 12,617*l.*; reserve for income-tax, 257*l.*; reserve for bad and doubtful debts, 1,000*l.*, leaving to be carried forward 4,662*l.*

**ULSTER CHEMISTS (LIMITED).**—In spite of the fact that our reporter was refused admission to the meeting of the shareholders of this company held on Monday, July 20, and was refused information in regard to the business of the meeting, we were able in our issue of August 4 to state that the Committee of Inquiry had recommended the voluntary liquidation of the company, and that the meeting adopted the committee's report. This was the first information of the matter published. Its correctness is shown by the fact that on August 7 Mr. R. W. McKnight, secretary of the company, issued to the shareholders a notice calling a meeting for Thursday, August 16, "to consider a resolution that the Ulster Chemists (Limited) be wound up voluntarily." This resolution was passed by the meeting, and another to confirm it was held at the Hôtel Métropole, College Square, Belfast, on Monday, September 3, at three o'clock. The resolution was duly confirmed, and Mr. Hugh Smylie was appointed liquidator. There is much indignation amongst the shareholders as to the manner in which the business has been managed by the directors.

**SACCHARIN CORPORATION (LIMITED).**—An extraordinary general meeting of this company took place on August 31, Captain M. A. Laing (Chairman of the Company) presiding. The Chairman explained that the object of the meeting was to subdivide the shares of the company into two shares of 5*l.* each, fully paid. This had been resolved upon on the advice of leading members of the Stock Exchange, who considered that the shares would be more easily dealt in if issued at 5*l.* instead of 10*l.* He then proceeded to give a few particulars of the progress of the company's business since its creation in 1897, stating that for the first year the sales were considerably in excess of the anticipations held out in the prospectus. The second year showed an increase of 3 per cent., and the third year a further increase of 3 per cent., whilst for the first four months of the current financial year the increase amounted to 12 per cent. against the corresponding period of last year. In the course of last year it occurred to him that the managerial expenses of the company were too large, in view of the litigations in which the company was involved, and, after certain delicate negotiations, in which he was met in a liberal spirit, the managing directors waived their claims to a percentage on the profits to which they were entitled, and the ordinary directors at the same time agreed to a reduction of their fees in some cases by rather more than one-half. The directors have further concluded an arrangement with the manufacturers from whom the bulk of their supply is obtained for a revision of their contract, whereby they are able to produce saccharin at a far lower price than has hitherto been done. One of the managing directors also had an agreement with

the company, under which he received an extra percentage, and that has been cancelled by issuing to him a compensation in debentures. All these economies mean a saving of quite 5,000*l.* per annum. On the other hand, the prices now obtainable are much below those which were current before the formation of the company. This reduction, he said, had been rendered obligatory through the fierce competition of infringers of their patents. After detailing the circumstances of the various lawsuits, the Chairman said the result of the judgment in the Court of Appeal [*re* the Chemical and Drugs Company, now extinct.—EDITOR] placed all users who buy or who have bought the infringing saccharin, entirely at their mercy, and it is hoped that by liberal treatment on the company's part they will all be induced to come to a speedy settlement and to enter into contracts with the company for their future supply. It is contemplated that a largely-extended use for saccharin will be found in other directions than those at present employed, and negotiations are now pending with two French companies to place on the English market two new substances wherein saccharin forms an important ingredient. Owing to the heavy legal expenses they have not been able to pay the dividends they could have wished. However, with the economies which have been effected in the management, and looking to the present state of the business, there was every reasonable hope that in future they would be able to pay a dividend of 5 per cent. on the ordinary shares. He moved:—

That each of the 20,000 10*l.* shares in the capital of the company, whereon 10*l.* is paid up, be subdivided into two shares of 5*l.* each, fully paid, and that the shares resulting from such subdivision be renumbered consecutively from 1 to 40,000.

Mr. A. Gordon Salamon, in seconding the resolution, said although they had passed through a litigation such as very few companies had been subjected to, yet they had been able to pay debenture interest and put 5,000*l.* aside every year to the redemption of debentures. He considered that in future there would be no difficulty in fulfilling the Chairman's prophecy and in paying a dividend of quite 5 per cent. upon the ordinary shares. The resolution was carried unanimously.

## Business Changes.

**MESSRS. POTTER & CLARKE**, Viaduct House, Farringdon Street, E.C., have purchased the leech business of Mr. Lesser Friedlander, 3 Houndsditch, E.

**MR. T. MATTHEWS**, chemist and druggist, Ross, has purchased the business of Mr. W. Sambrook, pharmaceutical chemist, Monmouth. [Corrected notice.]

**MESSRS. JUDD & MANNERS** have arranged the sale of Mr. Morris's old-established business in the High Street, Bullth Wells, to Mr. John Ward, of Birmingham.

**MR. A. F. TAYLOR**, chemist and druggist, has opened a new pharmacy (with fittings supplied by Messrs. Ayrtton & Saunders, of Liverpool) at 12 Lynthorne Road, Frizinghall, Bradford.

**MR. WM. MACMILLAN**, chemist and druggist, of Insch, is erecting a dwelling-house and shop at the junction of Western Road and Commerce Street. The new building will form an attractive frontage to the street.

**MR. J. W. J. TURNER**, pharmaceutical chemist and principal of the Sheffield College of Pharmacy, has disposed of his retail business at 118 South Street, Moor, Sheffield, to Mr. Harold H. Cocking, of Rotherham, and intends devoting the whole of his time to teaching and analytical work at the Sheffield College of Pharmacy.

THE partnership hitherto existing between Mr. D. W. Greenhough and his son, Mr. George D. Greenhough, 29 Rood Lane, E.C., has been dissolved. Mr. D. W. Greenhough will continue the business, under the style of D. W. Greenhough & Son as heretofore. Mr. George D. Greenhough has been admitted a partner into the firm of Messrs. G. Boor & Co.

THE premises which were formerly the pharmacy of Mr. C. P. A. Morrison, chemist and druggist, at 24 Corn Market Street, Oxford, have been converted into a branch of the Capital and Counties Banking Company. Mr. Morrison announces that he is giving up business and will close his present place—formerly his branch—the St. Ebbe's Drug-stores, St. Ebbe's Street, Oxford, on September 15.

## French News.

(From our Paris Correspondent.)

THE ASSOCIATED CHAMBERS OF COMMERCE of the United Kingdom commenced their meetings in Paris on Wednesday, September 5, under favourable auspices. They were received at the Trocadero by M. Millerand, Minister of Commerce, and M. Alfred Picard, General Director of the Exhibition. The Minister gave an address of welcome, in the name of the French Government. The members then visited the Exhibition, where Lord Avebury delivered his presidential address, and thereafter a discussion took place on "State-aided Commercial and Technical Education," resolutions in favour of it being adopted. The British Chamber of Commerce in Paris has admirably organised the programme for the entertainment of the "Associated" visitors here.

**OBITUARY.**—The death is announced of M. Pierre de la Calle, assistant manager of the Pharmacie Centrale de France, the well-known wholesale house for supplying French pharmacists. He was born in Havana, but was educated in France, and having adopted pharmacy as a career, passed his apprenticeship at Dr. Mialhe's *officine* (now owned by M. A. Petit). After taking his diploma and obtaining useful experience with, among others, M. Regnaud, then director of the Central Pharmacy of Hospitals, he joined the Pharmacie Centrale de France. Such is, briefly, M. de la Calle's career, but to those with whom he came into contact he was known as a man who had not only a thorough grasp of his trade in all its technical details, but combined with them all those qualities which make intercourse both agreeable and instructive. An incurable malady took hold of him some five years ago, but he continued to work almost until the end. He was a little over 50 years of age.

THE INTERNATIONAL CONGRESS OF PHOTOGRAPHY terminated its meetings in Paris last week. One of the objects of the congress was to simplify and regulate the names of apparatus and measures, but as no final decision was arrived at, a permanent commission, composed of photographers of various nationalities, was formed to study the questions further. The question of the copyright of photographs was discussed, and the Congress pronounced itself emphatically in favour of the protection of photographic work in the same degree as drawings, engravings, and lithography. At the same time it was decided that a distinction should be drawn between the right of property in photographs, and the right to use them. A vote was taken to the effect that it is advisable to create in every country archives of photographs, which should be kept with the written archives. M. Janssen was President of the Congress, and M. S. Pector General Secretary.

**EXPLOSION OF MAGNESIUM.**—Quite an alarming explosion took place at the offices of the "Photo-Programme," 29 rue du Mail, Paris, about 7 o'clock on Monday evening, September 3. It appears that M. Jean Larcher (Director of the "Programme," which is a well-known illustrated review), was engaged with two assistants in developing some negatives in a dark-room attached to his offices. One of them carelessly struck a match to light a cigarette. He happened to be near a big jar of powdered magnesium, and the latter exploded. The house was shaken to its foundations, all the windows were blown out, and a perfect panic seized the inhabitants of the house, as well as the neighbours, for the rue du Mail is a narrow thoroughfare in a busy quarter, and all the houses are five or six stories high, and let off in flats. When assistance came the men were discovered severely injured, and they were conveyed to the nearest hospital. The other people who suffered personal injuries by the explosion were a M. Pozimonin, who was passing the house and received broken glass on his head. A tenant, Mme. Charlotte, happened to be standing at a window when the accident happened, and she was knocked down and sustained some nasty bruises, but a clerk who was in the next room to that in which the explosion occurred, was lucky enough to escape with no injury beyond the shock.

## Zanzibar Produce.

IN view of the fact that the harvesting of the Zanzibar clove-crop usually commences this month, the report of Mr. Acting-Consul Kestell Cornish on the trade of Zanzibar for 1899, which has just been issued by the Foreign Office (No. 2351, 1*d.*), is well worth reading by those interested in the spice. Dealing first with the general trade of Zanzibar, the report states that "prosperous as was 1898 . . . the year 1899 has been more satisfactory," and this in a measure was due to another large clove-crop. Among the countries from which goods are imported into Zanzibar India maintains her position in the first rank, the value of this trade showing an increase of 24,196*l.* The value of imports from the United Kingdom was, as in previous years, greater than the value of those from other European countries, the increase being 24,932*l.*; Germany comes next, imports thence being 50,310*l.* less than those from the United Kingdom, but here again there is an improvement on the imports of the previous year; United States imports also increased by 22,023*l.* The value of imports from the interior of Zanzibar and Pemba shows an increase of 23,315*l.* over those for the previous year, an abundant clove-crop being the cause of this. The exports were valued at 1,513,407*l.*, or 15,524*l.* more than in 1898. The principal items contributing to the general improvement were cloves and clove-stems (increased) by 63,452*l.*, ivory by 14,398*l.*, petroleum by 9,698*l.*, rubber by 6,676*l.*, gum copal by 5,776*l.* The following are the figures:—

	1899	1898
	Lbs.	Lbs.
Cloves ...	16,593,340 (197,232 <i>l.</i> )	10,856,566 (143,730 <i>l.</i> )
Clove-stems ...	43,776,691 (12,854 <i>l.</i> )	1,227,076 (3,904 <i>l.</i> )
Chillies ...	412,011 (5,419 <i>l.</i> )	332,658 (3,899 <i>l.</i> )
Beeswax ...	25,328 (1,190 <i>l.</i> )	96,450 (4,446 <i>l.</i> )
Gum copal ...	503,340 (32,342 <i>l.</i> )	500,732 (26,656 <i>l.</i> )
Ivory ...	286,334 (127,312 <i>l.</i> )	269,312 (112,914 <i>l.</i> )
Rubber ...	313,770 (41,298 <i>l.</i> )	234,522 (34,622 <i>l.</i> )

Tracing the destination of some of these exports, we find that the bulk of the cloves was absorbed by this country, the figures showing an increase of 6,311*l.* France fared badly, cloves being less by 1,527*l.*, copal by 422*l.*, and no chillies were sent to that country. Cloves to the value of 55,707*l.* went to Holland—an increase of 31,210*l.* on the figures for 1898, which was the first year in which Holland took exports from Zanzibar. The United States purchased less cloves by 2,623*l.*, while chillies rose by 1,106*l.*

The Zanzibar crop of cloves for 1899 was large, the total crop from Pemba and Zanzibar yielding 484,085 *frasilas* (1 = 35 lbs.), exceeding that of the previous three years. Concerning the coming crop, however, prospects are not so bright, owing to the abnormal quantity of rain and consequent floods which have prevailed, so that it is feared the crop for the current year will be small. Last year a consignment of 35 bales was valued on the London market at 5½*d.* per lb., or fully 2*d.* above the usual quotation, and it was estimated that such a difference between "fair" and "fine" cloves had never been realised before. There is, however, only a limited demand for this fine quality at such a high figure, and it is estimated that a large shipment of, say, 500 bales, would only realise about ½*d.* per lb. in excess of the market price for "fair" cloves.

Although there has been no great dislocation of labour in the Zanzibar plantations consequent on the abolition of slavery, there is little doubt (says Mr. Cornish) that the days of prosperity for the Arab cultivator are at an end, because he is unable to grapple with the "paid-labour" difficulty, which entails effective supervision, attention to detail, and the gradual improvement of the estate; to which must be added the fact that, with the exception of a few owners of large estates and wealthy householders, Arabs have not the necessary capital for the employment of regularly-paid labour. In the case of European overseers, however, it has been found that both in Pemba and Zanzibar, where money (instead of payment in kind) has been given in wages, labour has been readily obtainable.

## Canadian Pharmacy.

THE conditions under which Pharmacy is conducted in those British colonies and dependencies are similar to those which prevail at home. Associations of colonial pharmacists meet and discuss the same old problems—cutting, unqualified practice, unsatisfactory Pharmacy Acts—in much the same way as we do. The various associations in the Dominion of Canada have met during the past month or two, and we show what they were doing in the subjoined concentrated reports.

Speaking at the annual meeting of the British Columbia Pharmaceutical Association in Victoria, the President (Mr. J. Cochrane) discussed the drawbacks of the Pharmacy Act of the province, stating that it was by no means complete, and steps towards further amendment should be taken as soon as political conditions warranted. Some members thought the Act was neither the protection to the public nor to pharmacy that it was designed to be. Probably the weakest point in the Act is that it applies only to incorporated cities and towns in the province, and a section provides for the registration of pharmacists resident for six months in a new town prior to its incorporation. One drawback that the Council has to contend with in enforcing the Act is the difficulty of becoming acquainted with cases of violation, on account of the distances between the executive body and the various sections of the province. Turning to notable events which had transpired during his term of presidency, Mr. Cochrane instanced as the most important the adoption of the B.P. 1893 as the standard. The latest Pharmacopoeia he considered to be a decided improvement on its predecessor. Another important step was the formulation by the Board of Examiners of an outline of studies for the Minor and Major examinations, with a list of textbooks for prospective candidates. The city of Vancouver had been selected as the most suitable place for holding examinations. Referring to the commercial side of the calling, Mr. Cochrane said the pharmaceutical year had been one of general prosperity, but he urged upon every member of the Association the desirability of securing and maintaining a closer commercial understanding amongst themselves, so that they might present an unbroken front to the "cutting" and similar evils.

At the same meeting a paper on "The Apprentice" was read by Mr. J. H. Emery. Amongst other things he said:

The apprentice bravely takes up the relief of suffering humanity and grinds his weary life out in the self-sacrificing duty, infusing the principles of sobriety and integrity into his life until he finally graduates with a full measure of honour and hands down his spatula tinged with the gore of many struggles to his no less zealous successor. He has much to learn, many worries to face and overcome, and hours of sleep to forego. The druggist's life is necessarily a dealing in little things, and he must realise that thoroughness in the little things make success in greater matters possible. The apprentice should start at the bottom. He should know all about sweeping-out, washing mortars and graduates, and should be able to give pointers on what to use to take out those many stains we always meet with. From the tools in the sink he advances to dirty the graduates for another to wash, but he must have his eyes and ears wide open all the time. If he is truly anxious to learn, something will happen every day to arouse his curiosity and thirst for knowledge. He should then make a note to be looked up in his evening reading. By so doing his reading and daily work become inseparable. Mr. Emery recommended a beginning with the Science Primers by Huxley and Roscoe, continuing through Hooker, Bentley, Attfield, and Remington, to Squire's Companion and the B.P. itself.

At a meeting of the New Brunswick Pharmaceutical Society, held on July 11 at St. John, N.B., it was shown that the Society's affairs were satisfactory. The address of the President (Mr. S. MacDiarmid) dealt with the year's work, the most notable item being that the examination results showed, from the large number who passed, that the assistants had either been studying very well or that the examiners had been getting the examinations down to a practical basis.

The Council of the Ontario College of Pharmacy held a five-day session at Ontario last month. Education, registration, and examination occupied the most of the working hours, and reciprocity had a good show. Touching

upon the interchange of diplomas with British Columbia the Educational Committee recommended that reciprocity be restricted to members of their respective provinces who had been registered by examination. As to an inquiry by the Pharmaceutical Association of Quebec regarding the kind of certificate issued to successful candidates who had attended two courses of lectures at one college, but had not served an apprenticeship of four years in Ontario, the committee informed the Quebec Association that the Council accepted apprenticeships of four years in other provinces of equal standing to those of Ontario, and granted candidates the diploma of the Ontario College, which entitled the holder to all the privileges of registration in Ontario. The committee appointed to meet the Quebec Pharmaceutical Association with respect to reciprocity of registration, regretfully reported that they had been unsuccessful in their endeavour to complete the reciprocal relationship which connected their College with all the other licensing pharmaceutical bodies of the Dominion. Quebec still held out, but it was pointed out by one speaker that it was not the Quebec men who were holding aloof, but graduates of the Ontario College who had become established in Quebec and were loth to allow others to go in—a shocking dog-in-the-manger policy say we.

## Photographic Notes.

By a Pharmaceutical Camerist.

### PUSHING PHOTOGRAPHIC BUSINESS.

MR. FRANK W. STEDMAN, chemist, 76 High Street, Ashford, Kent, has issued an illustrated catalogue of photographic materials, and is also the author of a neat little brochure entitled "A Simple Outline of the Process of Photography." It is written in popular language, and contains in a concise form all the information a beginner is likely to require. The idea should bring business.

### EMPIRE P.O.P.

is the name of a printing-out paper which is being introduced by Messrs. Tait & Co., 24 High Street, Hampton Wick, Middlesex, and is claimed to print and tone in a shorter time than usual with such paper, and be rich in detail-retaining features. As far as I can judge from the limited number of experiments I have made with the paper, these claims are quite justified, and as the terms upon which it is offered to dealers are liberal, I expect to be able to make it a leading line next season, if further experiments bear out my present conclusions.

### THORNTON FILMS.

The newest photographic film is the Thornton film, made by the Thornton Film Company, Altrincham, Cheshire. The sensitive film is spread on paper which has been made transparent by treatment with Canada balsam or some such substance. The flat films, which I have been trying, are quite supple, and develop easily in any of the usual developers. A "fix-hardening" solution is used after developing composed of—

Chromic alum	...	...	...	1 oz.
Sodium sulphite	...	...	...	2 oz.
Water	...	...	...	20 oz.

Dissolve and add—

Sodium hyposulphite	...	...	...	6 oz.
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I find the films do not cockle at all during the developing-process, and by reason of the transparent backing it is not so difficult to judge of the density as it is where opaque paper is used. After the films are washed they are soaked in a glycerin-bath and dried. The backing strips off easily, but is not to be removed till the film is bone dry. The prices of the cut films are the same as glass plates, which should render them popular. "Dayrolls" for cartridge cameras and daylight-loading roll-holders are also made.

### DARK-ROOM.

Mr. J. Lohoar, 38 Cadzow Street, Hamilton, has lately added a dark-room for the use of amateur photographers.

## DRUGGISTS' SUNDRIES.

**PATENTS AND THE ORANGE RIVER COLONY.**—It is intimated that the patent law of the late Orange Free State has not been altered. Applications, if addressed to the Military Governor, will be received and duly noted, and later on handed to the Registrar of Patents as soon as that official's office has been reopened, which the Governor trusts will be soon. The documents can be lodged in English.

**QUALITY OF AMERICAN SODIUM PHOSPHATE.**—Mr. E. H. Gane, Ph.C., in a communication to the *American Druggist*, states that with a view of ascertaining the condition of the sodium phosphate on the American market, a number of experiments have been carried out, and the results show so far that no such condition of affairs obtains as in England. This was to be expected owing to the rigid requirements of the U.S.P.

The *Daily Telegraph* rather gives itself away in summarising what its correspondents say about the carbolic scheduling. "Most of the sanitary and disinfecting fluids," says the *D. T.*, "contain from 5 to 8 per cent. of carbolic acid, and the new law ordains that none but registered chemists shall sell such compounds. This means that people will have to pay a much higher price for disinfectants, and consequently much less will be used—to the detriment of the public health." It means nothing of the sort.

**OUR GENERALS IN SOAP** did not prove a fortunate investment to M. Paul Villain, a Frenchman not naturalised in this country, who thought to combine patriotic fervour with the matutinal toilet, and make profit thereby. The idea was excellent. On opening the packet there was "Bobs," or "B.-P.," or any other hero of the hour in counterfeit presentment, stern of visage, as became the warrior, but no doubt broadening into a genial smile as the lather-making progressed. So taken was M. Villain with his invention that he brought out the Patriotic Soap Company (Limited) to exploit it; but three months' work in the Goswell Road has resulted in his dropping into the Bankruptcy Court with liabilities of 1,116*l.*, and assets estimated to bring in only 75*l.*—*Daily Telegraph*.

**NITRIC-ACID CURE.**—Mr. W. Kilsby, a jeweller in New Oxford Street, London, having noticed that the fumes of nitric acid corroded everything but glass, conceived the idea of using the vapour for the destruction of disease-germs. He began with one of his family, who had virulent symptoms of diphtheria, and in a very little while the patient was perfectly cured. Since that time the nitric-acid fumes have been employed with amazing results in cases of scarlet fever, diphtheria, and incipient consumption; and Mr. Kilsby wrote to the Royal College of Physicians, stating that he had found an absolute cure for infectious diseases, and by way of reply he received an intimation that the College did not deal in "secret remedies." All this the *Daily Mail* tells in good faith, and we repeat it because some of our subscribers may be asked for the ridiculous and dangerous cure.

AN M.D. at Liverpool relates the following experience, which he thinks may be instructive to laymen unacquainted with the mysteries of medical etiquette. One of his patients, whose family he had attended for many years, recently desired the M.D. to confer, respecting his case, with a physician in Rodney Street. An appointment was made, and doctor and patient were ushered into the presence of the consulting physician. Before examining the patient, however, the consulting physician asked for what was practically a confession of his medical faith from the family practitioner. The latter's answers failed to square with some of the cherished predilections of the eminent catechist, and he thereupon declined to proceed with the conference. No doubt he had a perfect right to take this course, but it seems rather hard that a patient should be denied the benefit of a specialist's advice because his doctor and the specialist disagree on some points of medical belief.—*Truth*.

THE MEDICINE HABIT gave Mr. George R. Sims some good copy for the *Referee* last week. He says:—Every chemist has upon his books well-to-do customers who have mixtures made up almost every day. A doctor is called in and gives a prescription, say, for nervous depression or for dyspeptic trouble. That prescription will live for years. The entire family will try it one after the other, and get at last to take it about once a week as a mere matter of habit. The system, having been saturated with medicine, craves for medicine. The victims of the medicine habit would feel miserable if they were not dosing themselves. Some habitual medicine-takers, who have had a long illness and many prescriptions, will, when they get well, have the prescriptions made up again one after the other, and go through the whole series three or four times a year for the rest of their lives. There are families to whom the chemist sends in his book weekly, just like the butcher or the baker. Some of the customers are not content with one kind of medicine at a time. I know one man who frequently takes doses from four or five different bottles during the day, and who, when he goes out of town for a fortnight, takes his favourite mixtures with him in quart bottles.

## New "C. &amp; D." Books.

Published at the offices of "*The Chemist and Druggist*,"  
42 Cannon Street, London, E.C.

**The Art of Dispensing: a Treatise on the Methods and Processes involved in Compounding Medical Prescriptions.** Sixth edition, revised and enlarged. Crown 8vo. Pp. viii. + 490, with numerous illustrations, and bound in buckram. Price, 5*s.* 6*d.* net; by post, 5*s.* 10*d.*

**Veterinary Counter-practice: a Treatise on the Diseases of Animals, and the most Suitable Remedies for Them.** Written expressly for chemists and druggists by Members of the Royal College of Veterinary Surgeons. Third edition, revised and enlarged to 352 pages, with illustrations. Price, 3*s.* 6*d.* net; by post, 3*s.* 10*d.*

THE following are some comments which we have received from eminent pharmaceutical chemists and teachers in regard to the new edition of "*The Art of Dispensing*":—

"It is thoroughly up to date, and I have no doubt will have a large sale."

"My first acquaintance with '*The Art of Dispensing*' was some fourteen years ago, when I tried in vain to get a copy of the first edition. I, later, obtained a new edition, and it has been ready at hand ever since. The sixth edition appears to be an advance in every way upon previous editions."

"It is a *sine qua non* to the embryonic pharmacist."

"You have succeeded in making it one of the pharmacist's indispensable handbooks, and there can be no clearer indication for the need of such a work, or for the perfection with which that need has been supplied, than by the numeration of the successive editions and reprints. May its history be always *crescendo*."

"I have perused the sixth edition with as much pleasure as I did the first, and I find this one up to date in everything. It contains so much that is the outcome of practical experience in retail pharmacy that no student or employer can afford to be without it. I have recommended it to students for many years, and know of no better work on the subject for their use."

"It has enlarged its borders since the first edition was published, and it shows that there is 'faith in physic' by those who know how to use it. Every dispenser ought to have the book."

Either of the books may be obtained at the published price, *plus* postage, from the offices of THE CHEMIST AND DRUGGIST in London and Melbourne, Vic. The new editions have been stocked by the following wholesale houses, from whom they may be obtained with goods at the net prices:—

Ayrton & Saunders, Liverpool.  
Barclay & Sons (Limited), London.  
Boileau & Boyd (Limited), Dublin.  
Evans, Lescher & Webb, London.  
Evans, Sons & Co., Liverpool.  
Fletcher, Fletcher & Co., London.  
Glasgow Apothecaries' Company, Glasgow.  
Grimwade, Ridley & Co., London.  
Ismay, J., & Sons, Newcastle.  
Lennon (Limited), London.  
Lewis, H. K., Gower Street, W.C.  
Lloyd, Howard, & Co., Leicester.  
S. Maw, Son & Thompson, London.  
May, Roberts & Co., London.  
F. Newbury & Sons, London.  
Pinkerton, Gibson & Co., Edinburgh.  
Raines & Co., York.  
Raines, Clark & Co., Edinburgh.  
Sanger & Sons, London.  
Southall Brothers & Barclay, Birmingham.  
Sutton, W., & Co., London.

In the United States the new edition of "*The Art of Dispensing*" may be obtained, duty paid, from Messrs. McKesson & Robbins, of New York City.

NOT THE RIGHT KIND?—The use of glycerin soap in the temple tank at the Sri Narasimha Temple of the Konkani Brahmins has led to a faction-fight amongst the faithful. The Uralan of the temple fined the offender, but the fine was not paid, and a discussion of the intricate problem has set the community so much at variance that the police have to keep guard at the temple to prevent active hostilities.



**TO CORRESPONDENTS.**—Please write clearly and concisely on one side of the paper only. All communications should be accompanied by the names and addresses of the writers. If queries are submitted, each should be written on a separate piece of paper. We do not reply to queries by post, and can only answer on subjects of general interest.

#### Botanical Nomenclature.

SIR,—My friend Mr. Druce will not succeed in drawing me into the botanical area of his controversy with Mr. Holmes on the question of *Hanburyi* versus *Hanburii*. The employment of the latter word is alluded to by Mr. Druce as "the reporter's plan." As reporter on the Pharmacopœia, I had no plan of dealing with such botanical names. Perhaps my friend means "the editor's plan"? But neither as editor of the Pharmacopœia had I any such botanical plan. In these matters I simply did what the committee, acting on the advice of the botanical referees, desired me to do. I did not, and do not, make any pretence to be a botanical expert. I am an editor—a mere editor, if you will; at the same time I am within my editorial or my literary rights in admiring Mr. Holmes's reference to the admitted generic name *Hanburia* as supporting his preference for the *i* rather than the *y*. Similarly I appreciate Mr. Druce's explanation of the use of *y* in *Hanburyi* and *i* in *Hanburia*, though each name is given in honour of one and the same man, one of the earliest of my pharmaceutical friends—the revered Daniel Hanbury. Indeed, I suspect that Mr. Druce's great pleasure in finding that Sir William T. Thiselton-Dyer is in accord with him as to the general principle of spelling a botanical name exactly as it was first published, was founded on the information given in the article on *copaiba* in my report. But Mr. Druce's quotation of what he pleases to regard as my words respecting *Hanburia*—namely, "Holmes points out, much to the point," that there is also a genus *Hanburia*—convicts Mr. Druce of committing the very sin which his whole letter to you is intended to condemn—that is, "making a man say what he has not said." If my friend, or either of the three or four hundred workers at research relating to the British Pharmacopœia who possess a copy of my report for 1898 will look at the paragraph headed "*Cambogia*," it will be found that I neither wrote anything so pointedly inelegant, nor was guilty of any such obviously tautological solecism. I have been misquoted and misunderstood a good deal lately on matters even more important, though I have not considered that they called for present notice, but the setting of this gem of misquotation so tickled my sense of humour that I could not pass it by. Thou shalt not make a man say what he has not said. So says my friend Druce; so say I; so we all say. A most righteous canon: at Oxford as elsewhere.

Yours faithfully,

Watford, September 3.

JOHN ATTFIELD.

P.S.—For the benefit of future Pharmacopœias—the British and others—I hope that botanists will come to an agreement on this question of *Hanburii* v. *Hanburyi*.—J. A.

[To make Dr. Attfield's point perfectly intelligible to the thousands of our readers who have not the good fortune to possess his "Digest of Researches and Criticisms," we quote the gamboge paragraphs, italicising the sentence referred to.—Ed. C. & D.]

*Cambogia*, "from *Garcinia Hanburii*," after Daniel Hanbury. Druce, B. & C. D., XXXIII., 672, points out that the original spelling by Hooker, *Journ. Linn. Soc. XIV.*, 487, is *Hanburyi*, as also seen in the *Kew Index*. Holmes replies (through the Reporter) that the official form is the more classical, and is in accordance with De Candolle's and Sprengel's principles, and, much to the point, adds, "there is also a genus *Hanburia*, in which *y* gives place to *i*."

#### The Proposed B.P.C. Research-worker.

SIR,—It may interest those who have already subscribed to the fund for a Conference research-worker that the subscriptions have now reached the sum of 100 guineas. To the

previous list of the names of subscribers given in this journal on June 23, page 1030, must now be added those of Messrs. Stafford Allen & Sons, London, E.C.; Mr. N. H. Martin, F.L.S., &c., Newcastle; Messrs. T. Tyrer & Co. (Limited), Stratford, London, E.; Messrs. Wyleys & Co., Coventry. I have thought it desirable to publish these names at once in justice to the subscribers, since there is no probability of another meeting of the Executive of the Conference occurring before the meeting of the delegates from the Council of the Society and from the Executive of the Conference to consider the subject.

Sevenoaks, September 4.

E. M. HOLMES.

#### The New By-laws.

SIR,—I regret to notice that "Xrayser" has not yet observed the injustice in the proposed new by-laws which is pointed out in the Scotch petition to the Privy Council. No. 1 candidate gives notice of his intention to attend an examination and pays a fee of ten guineas, but when the time appointed approaches he resolves to delay his appearance for three months, probably in order to become more fit. His action is deliberate, and he pays the guinea penalty. So be it. No. 2 candidate, through illness, becomes physically unfit to attend, and he too, under the new by-laws, pays the same penalty. No distinction is made between the man who is unfortunate and through no fault of his own cannot attend the examination, and the man who has no excuse at all. This was not so formerly, and, I submit, is unjust. Again, No. 3 candidate is struck down by illness after he has put in an appearance at the examination, and the new by-law gives the Council power not only to fine him 1*l.* 1*s.*, but to make it 3*l.* 3*s.*, according to their discretion; and this when 10*l.* 10*s.* has been charged as an entrance fee, and Nos. 2 and 3 have doctors' fees to pay, and No. 3 probably travelling and hotel expenses in addition. The question is not affected by the cost to the Society of such failures to attend or to pass in consequence of illness, but as "Xrayser" mentions this I may say that as the whole staff of clerks and examiners are not employed solely on this unfortunate's case, one candidate, more or less, at an examination does not probably make a sixpence of difference to the Society.

Should not a great Society like ours act generously to those who suffer in this way? All other examining bodies throughout the country do. Apart from the question of justice this policy would ensure to the Society what is far more important than guineas—viz., the good will during their lifetime of those who pass their examinations. On this account I regret that "Xrayser" should so far support what has been alleged as a guinea-getting policy, and it is worthy of note that the annotator in this week's *Journal* gives himself away on this point. Amid a number of mis-statements and irrationalities he says that "the advancement of pharmacy as a profession requires that those who practise it should not be drawn from a class of members of (*sic*) which the payment of an extra twenty shillings sterling is such an all-important matter." Indeed! It is not, then, men of ability—educated men, intelligent men—who are wanted in pharmacy. "No," says the annotator; "it is men who won't miss twenty shillings occasionally." This has never before, to my knowledge, been more plainly put. Let us hope it is not true.

I am sure that the Council has passed this by-law without full consideration of its meaning and effects, and I am certain also that if "Xrayser" will apply his usual penetration to the subject he will soon change the views expressed in this week's issue, especially if, as I am sure is the case, he possesses some of "the milk of human kindness" in his anatomy.

Yours sincerely,

Edinburgh, September 1.

CLAUDE F. HENRY.

SIR,—Scotch pharmacists must regret the attitude of "Xrayser" on their effort to retain in the new by-laws the very reasonable and practically universal provision in the case of all examining corporations by which, in cases of certified illness before or during the progress of an examination, the examination may be postponed without payment of any further fee or of merely a nominal one. Take, for instance, the University of Edinburgh. At a recent second professional examination in medicine one candidate was attacked by violent headache in the examination-room while

undergoing examination. The examiners were satisfied that the examinee was not in a fit condition to proceed or remain in attendance, and the candidate was sent away with instructions to come up again to complete the examination on a future occasion. In short, the examination was postponed for three months and no further fee asked. This is a typical illustration of what is a matter of frequent occurrence. There is no university ordinance or by-law on the subject. The practice is recognised as so essentially fair and reasonable that it is left entirely to the discretion of the examiners, without any specific regulation of any kind.

Is it not a little misleading to say that Scotch candidates who have passed the Minor practical examination and are absent through certified illness from the Minor oral examination have been treated as failures? I have been told that only one Scotch examinee has been treated in this way, but not by the Board of Examiners. The examiners, it seems, had no difficulty in deciding to postpone his examination to a subsequent date under the regulation which enables them to excuse failure to attend, or, in other words, absence from an examination in cases of certified illness. They seem even to have made an arrangement with the examinee that they would examine him if he presented himself again and paid to the Registrar a nominal fee of 1s. I am further told that the examinee, in fulfilment of his part of the arrangement, paid his fee to the Registrar, but the latter refused to accept it, and, backed by the Council, insisted on treating him as if he had attended the examination and had failed to satisfy the examiners, and demanded payment of the full re-examination fee of 3l. 3s. The examinee has again been told that the examiners adhere to the arrangement and are still willing to examine him again on payment of 1s. It is thus more accurate to say that the examiners have treated the examinee as an absentee or person who has not duly attended at the time appointed, while the Registrar has treated him as a failure. Both Scotch pharmacists and the examiners challenge the right of the Registrar or Council to treat such cases as failures, and maintain that the decision of the examiners is the true meaning of the existing by-laws. This contention is by no means limited to Scotch pharmacists, though they alone have apparently taken concerted action to vindicate the common-sense and reasonable and, I will say, truly loyal and polite view of the matter from the ground of the Society's best interests as a representative corporate body. Members of the Society and teachers in England have had the same contention with the Registrar, and have maintained the same interpretation of the regulations as Scotchmen. From this point of view Scotch pharmacists are not able to appreciate the new penalty which "Xrayser" dubs, with unconscious humour, a "concession." On the contrary, they see in it, on the one hand, an entire abolition of an established practice which is both reasonable and fair and in consonance with the practice of similar examining corporations in medicine, science, law, and divinity; and, on the other hand, the declaration of a harsher and more exacting and essentially unfair and unreasonable policy. Does "Xrayser" think there is anything new in saying that a sickness concession is "at the option of the Council." Many seem to overlook the fact that the sickness provision of the present by-laws is not compulsory, but optional on the part of the examiners or Council. They are in no case bound to accept an excuse, but must be satisfied in each particular case that it is right for them to do so. On this point there is no difference in principle between the old and the new by-laws. As to the bogey of a whole staff of clerks and examiners working for one shilling, surely "Xrayser" is drawing on his imagination. One candidate more or less makes an infinitesimal difference surely? Benevolence is supposed to be a cardinal doctrine of the Society's charter, and it would be a gracious thing to show consideration at a trying time to a man suddenly overtaken by illness or other like inevitable misfortune. That is all that is asked by Scotch pharmacists, and it would pay in the long run as certainly as the new harsh policy will prove penny wise, pound foolish.

Yours faithfully,

SUNWAYS. (173/52.)

There are some wrathful Scotchmen, writes *Thistle-down* (173/52), who want "Xrayser's" blood badly, but that very

shadowy individual for the present eludes all attempts at identification, and these irate petitioners will have to wait their turn. Curious notion, when you think of it, that the entire staff at Bloomsbury Square and the Boards of Examiners are maintained to examine one candidate, and when that poor lone soul turns sick, the aforesaid staff and examiners are turned adrift like so many frozen-out tea-gardeners, with nothing to do. It would be interesting to know exactly how many medical certificates have been presented for the last year or two, leaving out the last examination, when neurasthenia was no doubt specially prevalent. This would soon show how much foundation there is for all the sickening twaddle about trouble to the clerks. What are they paid for, one would like to know? A fine story, indeed. Try another, Mr. "Xrayser."

#### Warning to Chemists.

SIR,—May I warn chemists, particularly those in and near London, against a man, about 50, with long white hair, flowing white beard, and moustache? He is anxious to act as *locum tenens*. When refused, he sighs and rues the day —'s Drug Company set up against him and ruined him. He has been in hospital, and is trying to get in again. He is penniless and hungry. He knows several chemists, and Mr. Bremridge well. He has subscribed to the Benevolent Fund over twenty years, from which he gets a grant this month. Mr. Bremridge does not know the man at all. He gave his name a fortnight ago as Charles Andrews. Six months ago he was Herbert King. I made a note of his name first time, but unfortunately I could not find it till he had gone, otherwise I would have got him into a hospital that day.

Yours faithfully,

A. H. B. (173/18.)

#### Ethical Advertising.

SIR,—Mr. Hyslop's ad. is splendid. The heading, "Pro Bono Publico," suggests that it is addressed to a *clientèle* accustomed to the language of the classics, yet, taking into consideration the neighbourhood whence the advice arises, the warning against "dirty drugs" is not without significance, although, apparently, the alliterative character of the phrase seems to be its chief recommendation. But why warn the public against "factory-made physic"? In the first place what is a "factory," and does the writer wish to convey the idea that all his "physic" is home-made? He also exhorts the public not to be "poisoned by cheap drugs," which forcibly reminds one of the Old Bailey lawyer's maxim—"No case; abuse the other side." The advertisement bears internal evidence that the writer does not rate the intelligence of his public too highly, as evidenced by the advice to "beware of taking too much physic, good or bad"; after this one would expect to read, "don't put your finger in the fire." Is oracular language good advertising? Is it better to say in an ad. "Don't forget to clean your baby's skin, all over, night and morning," or "Wash the baby"? I am inclined to think that Mr. Hyslop gives us a point in the former way of putting it—I write as a mere man. "Wash your baby" sounds insulting; the other way suggests to me that the mother has higher ideals, and the advertiser respects them, therefore reminds her of the baby. Anything in the nature of a puff being highly obnoxious, the swansdown is condemned in favour of cotton-wool. Perhaps a cheap "puff" lasts a long time in Portman Market, while a baby—especially a big one—may require a lot of cotton-wool, especially when a "new piece" is used "each time." (Patience, Mr. Editor, I am coming to the point.) With this cotton-wool the mothers of the West are to use violet powder—no "factory-made," common, or garden kind, but one that is proud of its distinction—"Hyslop's own." One can imagine how the happy proprietor of this unique preparation would hand it over the counter with a wistful, self-deprecating air as he murmured, "a poor thing, perhaps, but mine own!"

Yours truly,

MISCELLANEOUS CHEMIST. (169/36.)

#### Assistants and Employers.

SIR,—In this week's issue "Yorkshireman" recommends town "mouse" to become a field mouse, and notice the returns that have been made on his return. I carried on business for thirty-five years in town, and for sixteen I acted on his principle, and I can at any time fix the exact time of

my absence in six years out of eight by the returns being 35 to 40 per cent. below the fortnight before and after, and yet when I came home I could see no difficulties that could account for it. The fact is, the more the assistant is paid the less work he does and the more he grumbles. At the present time the condition of the retail trade will not pay large salaries if the master is to have anything left for himself.

Yours,

Sept. 2.

ANOTHER WHO KNOWS. (172/44.)

#### Sale of Carbolic-acid Preparations.

SIR,—I notice that "liquid preparations of carbolic acid and its homologues containing more than 3 per cent. of these substances" have just been, very properly, added to the schedule of poisons. Bearing in mind the ingenious quibbling as to the meaning of the term "preparations" which has occurred in the past, it is only to be expected that, when a non-pharmacist is prosecuted for selling liquid carbolic or cresylic acid, his astute advocate will plead that such an article is not "a preparation" of the same, a contention which, if successful, will cause the wicked to rejoice exceedingly.

Yours truly,

Sheffield, August 31.

A LOOKER ON. (21/8.)

#### Legal Queries.

Before sending in a query for reply in this section see if the subject is not dealt with in "The Chemists' and Druggists' Diary," 1900, pages 212-226, and pages 259-262.

264/36. *D. T. W.*—Neither tincture of arnica nor potassium permanganate is a legal poison. The recent carbolic-scheduling order applies only to "liquid preparations of carbolic acid and its homologues."

165/53. *Financial.*—(1) If A., a registered chemist and druggist, and B., an unqualified person, become partners under the title of A. & Co., chemists, and sell poisons, B personally infringes the Pharmacy Act, and may be prosecuted if he can be got at, which is the difficulty. (2) Particulars as to the formation of limited companies are given in our DIARY.

161/64. *Parsley.*—Apiol is not a scheduled poison, but it may be regarded as a noxious drug or thing the sale of which for an unlawful purpose (*e.g.*, to procure abortion) may bring the retailer into trouble. The customer who obtains it regularly is most probably using it legitimately; but that is a matter in which you should be the best judge.

142/51. *A. B.*—It would be better to abide by what your solicitor tells you.

156/66. *Wine Licence.*—The expenses in applying for an off-wine licence are paid by the applicant.

168/37. *Chemists.*—Actions in regard to the use of aerated-water bottles bearing a maker's name by other makers have been successful under the Merchandise-marks Act, but only in respect to beverages. Any action in respect to the use of such bottles for other purposes would be for damages against the user by the owner of the bottles.

160/1. *J. F.*—Particulars in regard to off wine-licences are given in THE CHEMISTS' AND DRUGGISTS' DIARY, 1900, page 231. You should communicate with the overseer of the parish.

163/17. *N. W. P.*—None of the articles which you name is a scheduled poison.

170/32. *Kirby* asks:—(1) "Is an unqualified assistant liable to pay the penalties under the Pharmacy Act for handing over the counter a patent medicine like Mrs. Winslow's soothing-syrup?" [Yes.] (2) "Are the words 'drug-store' used on labels by an unqualified person an infringement of the Pharmacy Act?" [No.]

162/50. *Quaro.*—The assistant's agreement which you describe is much too stringent, and would not be upheld by a Court. Generally, specification of the area and period of time are necessary. On the latter point yours is too vague; otherwise it is usual.

#### Miscellaneous Inquiries.

We endeavour to reply promptly and practically to trade questions of general interest, but cannot guarantee insertion of replies on a particular date, nor can we repeat information given during the past twelve months.

163/39. *Boric.*—We should interpret "Hyd. oleas., B.P., 5 per cent.," as an ointment containing 5 per cent. of the B.P. oleate of mercury.

135 37. *Myopia.*—We published the experiences of candidates at the Spectacle makers' examinations in the *C. & D.*, November 5, 1898, page 767, and July 1, 1899, page 28.

135/60. *CO<sub>2</sub>.*—The article in THE CHEMISTS' AND DRUGGISTS' DIARY, 1900, on the manufacture of aerated waters is the most complete treatise, from a chemist's point of view, that has been published on the subject.

163/37. *Inquirer.*—From 1 to 2 dr. of gelatin to 1 pint of wine is used for detannating. Use the smaller quantity for your calisaya-and-iron preparation. Also compare "Pharmaceutical Formulas," page 474.

167/26. *Pinus.*—The only difference in the turpentine is that it has considerably improved. You may use it for any purpose, such as lin. terebinth. or furniture-cream.

163/25. *Wyehe.*—Household Ammonia.—See *C. & D.*, September 9, 1899, page 452.

155 20. *Capsicum.*—Sarreguemines (or Saargemünd) is a town in Alsace-Lorraine. The address on the bottom of the covered pot is sufficient.

160/48. *Curious.*—(1) The addition of a little mucilage of tragacanth to a mixture in which strychnine was liable to be precipitated was correct. The prescription should be so marked. (2) Flückiger and Hanbury's "Pharmacographia," 21s. (Macmillan), is the only book which meets your requirements, but it is not up to date.

162/58. *Habet.*—Cheap Baking-powders are now made with acid bisulphate of potash. See a note in "Information Supplied," August 18.

165/1. *Lindum.*—It requires a lot of patience to clear a house well infested with bugs. The rooms should be systematically treated, the paper stripped off the wall, the floorboards caulked, and a vigorous fumigation carried out with sulphur, or, preferably, formaldehyde. You say that sulphur fumigation is very objectionable, but it is surely the less of the two evils.

160/63. *Perplexed.*—A mixture of acetanilide and caffeine citrate is safer than acetanilide alone. Caffeine is a heart-stimulant, and calculated to neutralise the depressing effect which acetanilide has on the heart.

161/1. *Ginger.*—We cannot guess what the smelling-bottle crystals are. Could you not send a sample of them?

164/53. *Print.*—Combined Toning and Fixing Bath.—See *C. & D.*, January 6, page 33, and January 13, page 73.

162/21. *Salol.*—(1) Linen-gloss Tablets we have examined consisted of curd soap or hard paraffin with  $\frac{1}{4}$  part of French chalk. (2) Carbolic oil (1-20) and creosote are now scheduled poisons. The order only applies to liquid preparations.

158/9. *Yorkshire.*—(1) Taylor's "Practical Treatise on the Sexual Disorders of the Male and Female," 12s. (Hirschfeld). (2) Salt of sorrel is generally interpreted to mean potassium binoxalate. Your friend who contends that it means oxalic acid is not so far out.

152/2. *Nunquam.*—(1) Nit-ointment.—The formula for this was given in the *C. & D.*, December 30, 1899, page 1074. (2) The book you refer to is Stokes's "Patent *alias* Quack Medicines," which was a reprint of articles that appeared in *Hygiene*. It is out of print. The published recipes for proprietary medicines are generally very wide of the mark.

### Information Wanted.

Postcard replies to any of the subjoined inquiries will be esteemed.

- 173/7. Little's Oriental balm. Who is the maker?  
 26/97. Address of makers of "Keystone" marking-ink.  
 26/97. Address of Chemical Union Company, makers of eucalyptus disinfectants, &c.  
 26/97. London address of Walker-Gordon Laboratory (New York).  
 173/35. Who is the maker of "Three Crowns" black dye?  
 173/21. Automatic scent-fountain for counter-use: where obtainable and cost?  
 165/2. Particulars of "Hayes's Treatment for Asthma," an American treatment, costing about 10*l.* for six weeks' supply of medicines.

### Reviews.

*Southall's Organic Materia Medica.* Sixth and enlarged edition. By JOHN BARCLAY, B.Sc. London, 1900. 8vo. Pp. xx. + 344. 7*s.* 6*d.*

THIS edition is brought into line with the new British Pharmacopœia, so far as sources and descriptions of materia medica are concerned, and with other matter fully thirty pages more have been added to the previous edition. We have compared the fifth and sixth, and noticed that some slips in the former have been remedied; at the same time we have noticed numerous amplifications, and the information in regard to essential oils is better, Mr. E. J. Parry's book having been brought into requisition towards this end. The fact may be recalled that drugs are considered according to their kinds—*e.g.* seeds, roots, rhizomes, and so on up to drugs of animal origin, and the treatise begins with a good botanical classification. It is one of the best books for students of pharmacy, but we strongly advise the editor to keep its bulk down if he desires to retain its popularity with students. The first step in this direction would be to remove the botanical introductions and make a separate book of them. This would permit the larger size of type to be used throughout, with advantage to readers.

*Commercial Organic Analysis.* By ALFRED H. ALLEN, F.I.C., F.C.S. Third Edition. With revisions and additions by the author and Professor HENRY LEFFMANN, M.A., M.D. Vol. ii. Part ii. Hydrocarbons, petroleum and coal-tar products, asphalt, phenol and cresolates. 8vo. Pp. viii. + 17 to 330 London, 1900: J. & A. Churchill. 14*s.*

IT was intended that this part should complete Vol. ii. and include essential oils, aromatic acids, and other allied compounds, but happily the hydrocarbons, petroleum, and phenols make by themselves a very compact book—the third of the series, and, in a sense, a complete monograph. It deals with a department of technical chemistry so far removed from essential oils commercially, though chemically allied, that it seems a stroke of luck for this particular department. The book begins with a section on *hydrocarbons* divided into classification, destructive distillation, tars, bitumens, petroleum and shale products, benzene and homologues, naphthalene and derivatives, and anthracene and associates. These chapters occupy two-thirds of the book. *Phenols* are next taken up, the section being divided into monohydric and dihydric phenols. When Mr. Allen completed the original work two years ago we gave some notes on the manner in which he wrote the book, and it was then indicated that besides his wide reading and practical experience as an analyst, there was concentrated in the work voluminous correspondence with authorities on every subject dealt with by him in his unique treatise. This still obtains, in some measure, in the third edition, but Mr. Allen entrusted the revision to Dr. Leffmann, and only the latter half of Vol. ii. Part ii. has been revised by Mr. Allen. We note with satisfaction that Part iii. of the volume is being done

by Mr. Allen himself, and as it deals with subjects which have undergone chemical revolution since the last edition was published, his editing will be of great advantage. The part now before us is a decided advance upon the last edition, and is peculiarly interesting to the drug-trade (wholesale and retail) in respect to the fact that it deals with such important staples, amongst others, as benzol, toluol, petroleum-spirit and oils, and coal-tar products generally, including carbolic acid and disinfectants, creosote and other products from wood-tar. The first part of the book shows Dr. Leffmann's intimate knowledge of petroleum and asphalt, and these sections have been much extended, while the second part dealing with the coal-tar products has been thoroughly revised by Mr. Allen, and his revision reflects intimacy with a peculiarly British industry, and knowledge of current literature, as shown by the numerous new processes which have been introduced.

### The Microscopy of Drugs.

*Atlas de Photomicrographie des Plantes Medicinales.* Par DR. L. BRÆMER et DR. A. SUIS. Paris, 1900: Vigot Frères. 9½ × 6. Pp. 237.

*Die mikroskopische Analyse der Drogenpulver: ein Atlas für Apotheker, Drogeristen und Studierende des Pharmacie.* Von DR. LUDWIG KOCH. Berlin, 1900: Gebrüder Borntraeger. Vol. I. Part I. 11¼ × 8¾. Pp. 76 and 3 plates. 3*m.* 50*f.*

THE importance of the microscopic study of drugs is now regarded as an essential part of the education of the pharmacist, and as a necessary equipment for determining the identity and purity of drugs. So far we have no work in English and published in this country which treats the subject specially, therefore we put the two works now before us together as typical of two methods. The French book is by far the more attractive. It comprises a series of seventy-six plates, on which are printed by half-tone engravings 159 photographs and photomicrographs of drugs. These are beautifully reproduced, and the microscopic sections are presented with marvellous clearness, each figure having annexed to it index words referring to the parts of the tissues represented, while a graphic text describes the origin of the drugs, their chief characteristics as viewed by the naked eye, and the structure revealed under the microscope. The book is divided into five series (I.) starches; (II.) roots, rhizomes, and tubers; (III.) barks and woods; (IV.) leaves; and (V.) fruits and seeds. The scope of the work is limited to a comparatively small proportion of materia medica, but the drugs selected for illustration and description suffice to exhibit the most important structures characteristic of vegetable materia medica, and that is as much as is required by the student.

The German work by the Professor of Botany at Heidelberg is of a different character. It promises to be an exhaustive monograph, as thorough in dealing with minute detail as the French one is graphic in the description of chief characteristics. The introduction into the German Pharmacopœia of descriptions of the microscopic appearance of drugs consequent upon the now almost universal custom of drug-compounders and retailers purchasing instead of grinding their powders, is the motive of the work. From the first part we can only judge what the rest is to be, and a large portion of this one is devoted to preparing powdered drugs for microscopic examination, as by treatment with water, glycerin, and saturated chloral-hydrate solution, with subsequent action of iodine, alcohol, and potash. Then follows an introductory consideration of the histology of barks, in which every part of barks generally is described, and the utility of each in the diagnosis of a powder is pointed out, appropriate examples of medicinal barks being quoted in illustration. Next follow the first three "barks"—*viz.*, orange-peel, cascarilla, and red cinchona, each having a lithographed plate containing thirty or more drawings of parts of the structure dealt with. The plates represent an enormous amount of labour, each drawing apparently being the compound of many sections of the part represented, and thus giving the analyst a better approximation to the general appearance than a single photomicrograph does. The plates are somewhat crowded, but that may not be a disadvantage to the patient worker. The atlas promises to be a first-class work of reference for specialists in the subject.

## Trade Report.

**NOTICE TO BUYERS.**—The prices given in this section are those obtained by importers or manufacturers for bulk quantities or original packages. To these prices various charges have to be added, whereby values are in many instances greatly augmented before wholesale dealers stock the goods. Qualities of drugs and oils vary greatly, and higher prices are commanded by selected qualities even in bulk quantities. It would be unreasonable for retail buyers to expect to get small quantities at anything like the prices here quoted.

42 Cannon Street, London, E.C.: September 6.

THERE is little of interest to record in the drug and chemical markets this week, complaints of dull business being the rule in many instances. Quinine has disappointed speculators, and during the first two days of the week practically no business was done, but a firmer feeling has since developed. Opium is dearer in Smyrna owing to American purchases, in consequence of which the London market is steadier at unchanged rates. All Chinese essential oils are quite inactive. English almond oil is 1*½*l. dearer. Other changes of the week are as follows:—

Higher	Firmer	Easier	Lower
Coca-leaves	Cantbarides	Acid, citric	Ammonia
Cocaine	Opium (in	Copper	sulphate
Linseed	Smyrna)	sulphate	Cloves
Oil, almond	Scuaga	Galls (blue)	Oil, turpentine
Oil, lea o i		Ginger	Quinine
Oil, linseed		(Cochin)	(sec. hand)
Pyridin			

### Arrivals.

The following drugs, &c., have arrived at the principal ports of the United Kingdom from August 30 to September 5, both inclusive:—Aloes, 30; annatto-seed, 2; arrowroot (St. V.), 176; arsenic (Austral.), 60; balsam copaiba, 9; bismuth, 6; cajuput oil, 50; camphor, (Jap.) 138, (from Ceylon) 22 tubs; cardamoms, 206; caraway-seed, 448; castor oil (Ital.), 25; chaulmoogra oil, 8; chamomiles, 27; chiretta, 18; cinchona, (Ceylon) 71, (E.I.) 30; cinnamon-bark (from Kobe), 118; clove oil, 7 cases; cod liver oil, 237; coriander-seed, 30 tons; croton-seed, 2; cumin-seed, 225; dragon's-blood, 21; drugs, (from Panama) 22, (from Callao) 9; essential oils (from Hong-Kong), 75; eucalyptus oil (Aust.), 202; fenugreek-seed, 8,050; galls, (Persian) 339, (Turkey) 50; gum arabic (Aden), 15; gum tragacanth, 14; honey (Jam.), 9; insect-powder, 4; juniper-berries, 200; lemon-juice, 30; lime-juice, 228; lime oil (W.L.), 48; manna, 2; opium, 62; orris, 38; quicksilver, 100; rhubarb, 21; rose oil, 1; senna (Tiny.), 308; soy, 299; squills, 51; sulphur, 700 tons; tonka-beans (Faral), 1; turmeric (Calcutta), 250; vanilla, 9 cases; wax, bees', (Jam.) 11, (E.I.) 5; wax, Japanese, 200.

### The Customs Report.

The forty-fourth report of the Commissioners of H.M. Customs for 1899-1900 states that the revenue yielded to the Exchequer was 23,800,000*l.* against 20,850,000*l.*, an apparent increase of 2,950,000*l.* By far the larger portion of the advance was attributable to heavy payments made in anticipation of increased duties, no less than 2,116,000*l.* being received in two days only—March 3 and 5. The receipts from cocoa rose 2·6 per cent., being 198,997*l.*, against 193,845*l.*, and it is placed on record as a healthy sign that "the whole of the increase has been in duty paid on raw cocoa, there having been an actual decrease in the yield from the foreign-manufactured article. This shows that the efforts made by the manufacturers of the United Kingdom to prevent this industry from falling into foreign hands have met with success." The consumption of tea goes on increasing, "the cup that cheers" yielding 4,628,946*l.*, an increase of 605,442*l.* Tobacco, on the other hand, has been rather a disappointment, the purely normal increase of consumption having been about 2,100,000 lbs., or rather less than had been anticipated, owing, no doubt, to the absence of many consumers in South Africa. We are still, apparently, drinking more coffee, although the increase in the yield from the berry of 10·3 per cent. is more apparent than real, as large quantities of the article were withdrawn from bond to be roasted and prepared for campaign purposes in South Africa;

when subsequently exported, the duty was, of course, returned. Thus 14,755*l.* was paid as drawback upon coffee exported in the past year, against only 3,593*l.*, so paid in the previous twelve months. The following table gives the gross amount of duty collected on articles the drug-trade is interested in:—

	1899	1900
	£	£
Chlorate hydrate . . . . .	1,269	1,334
Chloroform . . . . .	2	11
Cocoa or chocolate, in the manufacture of which spirit has been used . . . . .	1,072	1,104
Collodion . . . . .	14	—
Confectionery, in the manufacture of which spirit has been used . . . . .	521	520
Confectionery containing not more than 50 per cent. of chocolate . . . . .	57	49
Confectionery containing not more than 50 per cent. of chocolate, in the manufacture of which spirit has been used . . . . .	166	205
Ether, acetic . . . . .	109	208
Ether, butyric . . . . .	693	514
Ether, sulphuric . . . . .	27	379
Ethyl, bromide . . . . .	2	3
Ethyl, chloride . . . . .	232	287
Ethyl, iodide of . . . . .	1	2
Soap, transparent, in the manufacture of which spirit has been used . . . . .	107	119

### Cartagena Ipecac.

The importers of ipecacuanha at Philadelphia and the Customs officers are at war over the refusal of a collector to permit a consignment of so-called Cartagena ipecacuanha to be landed. The position the collector has taken resulted from a circular issued by the Treasury Department, ordering that it be refused a landing because of alleged impurities. A test showed that Cartagena ipecacuanha imported at Philadelphia had over 2 per cent. of emetine, which made it of sufficient strength to be admitted, 1*½* per cent. being enough according to the United States Pharmacopoeia, the work accepted by the Government. The importers propose to appeal to the Department, as according to the Customs chemist the parcel in question was above the standard. The circular issued by the Treasury Department now expressly forbids the importation of Cartagena ipecacuanha into Philadelphia, and instructs the collector there to act in accordance with the practice prevailing at New York and other ports, leaving the importers to appeal if they are dissatisfied with the examination or appraising officer's return. No doubt this action on the part of the authorities is due to interested parties in New York, who wish the Brazilian ipecacuanha to have the monopoly of the United States markets. It will be interesting to see what the next move will be, as the question is no nearer settlement.

### The English Hop-crop.

According to an article in the *Times* the English hop-crop this year is likely to be not only poor in quantity but infer or in quality. At no period of the season have the conditions been propitious. Under the influence of the cold barren spring the bine was late in starting growth. Its progress has been handicapped to an unusual degree by the attacks of aphid, red spider, and mould, from which the bine has been kept free only at a heavy outlay for dressing. After the intense heat of July came the violent winds at the beginning of August, and these were the cause of much mechanical injury. To what extent the crop will turn out below average cannot yet be stated, but if the yield should come up to half of last year's, as some experienced growers are inclined to think, this would be equivalent to 6 cwt. or 6*½* cwt. per acre. The total produce would then reach from about 300,000 cwt. to 330,000 cwt., in which case the output would be the smallest since 1890.

### Tyne Chemical-shipments.

The falling-off in the shipments of chemicals from the Tyne in the past few years is one that is notable, though it has become so irregular that many do not notice it. Not much more than a dozen years ago (says the *Newcastle Chronicle*) the chemicals shipped from the Tyne aggregated just about 290,000 tons, but they were down to about 160,000 tons for last year. This serious decrease is both in the home and foreign shipments, and it largely affects the "general" cargoes from the Tyne. In two years only—1897 being contrasted with 1899—the quantity of soda crystals shipped from the Tyne coastwise decreased by one-half. It is true that the chemical-manufacturer has to contend with new processes carried on both at home and on the Continent, but these

processes could suitably be introduced on the Tyne. There is also the heavy burden that the chemical-manufacture has to bear through the price of coal.

### Heavy Chemicals.

[These prices are for market-centres other than London.]

A quietly steady tone continues to be the main feature of the heavy-chemical market, and there is little new, or of very special importance, to be reported. Demand generally, both on home and export account, is only moderate, but notwithstanding this prices are well maintained owing to heavy cost of production. Home-consuming trades are only fairly well employed, and miscellaneous products are in moderate request. Calico-printers, dyers, and carpet-manufacturers all find trade on the quiet side, whilst bleachers, although not so busy as they were, are fairly well supplied with orders. Papermakers keep very busy, and soapmakers are in a similar position. Glassmakers keep steadily employed. Potters generally are quiet. The paint and colour-trades are also quieter.

ALKALI-PRODUCE.—Products under this heading show no material change. Late quotations are steadily maintained. Caustic soda continues specially firm, and in some cases higher prices are being asked; demand keeps strong. Bleaching powder is still quiet.

SALT-PETRE in fair request, and steady. British refined, barrels, 21s. per cwt., and kegs, 22s. per cwt. German barrels and kegs, 19s. 6d. and 20s. 6d. per cwt. respectively.

SATIN, WHITE, keeps moving steadily at unchanged rates of 57. 5s. to 57. 15s. per ton, free on rails in casks.

PEARL HARDENING.—Unchanged, at 37. 5s. to 37. 10s. per ton.

SATINITE.—In fair request, at 34. 2s. 6d. to 34. 12s. 6d. per ton, free on board or free on rails.

SULPHATE OF COPPER.—Quieter, and tends easier. Liverpool is now quoted 24*l.*, and forward 24*l.* 10s.

SULPHATE OF AMMONIA.—Very dull, with quotations ruling a trifle lower. Exports from Leith last week, 103 tons.

WHITE POWDERED ARSENIC.—Unchanged, at 19*l.* 10s., ex ship Garston.

COAL-TAR PRODUCTS.—Market generally is very steady. Various advances have taken place since last report, and prices all round are firmly maintained with advancing tendency. Benzols steady; 90 per cent., 10*l.*, and 50 per cent., 10½*l.* to 11½*l.*. Anthine oil and salts are higher, the former standing at 4½*l.* to 4¾*l.*, and the latter at 4½*l.* to 4¾*l.*. Anthracene firmer; A grade, 4*l.* to 4½*l.*, and B grade, 2¾*l.* to 3*l.*. Pyridin has advanced again, and now stands at about 7s. Toluol, 1s. to 1s. 1½*l.*, and pure, 2s. to 2s. 1*l.*. Naphthas steady: crude 30 per cent., 4½*l.* to 5*l.*; solvent naphtha, 95 per cent., 1s. 3*l.*, and 90 per cent., 1s. 1*l.* to 1s. 2*l.*; solvent wood colourless, 2s. 9*l.* to 2s. 10*l.*; and miscible, 3s. 6*l.*. Pitch very steady, at about 37s., f.o.b. East Coast.

### Liverpool Drug Market.

Liverpool, September 6.

CASTOR OIL.—Good Calcutta seconds is selling in a retail way at 3½*l.* to 3¾*l.* per lb. With an improved demand holders would raise their prices. First-pressure French is unchanged at 3¾*l.*; and first pressure English at the same figure.

TURPS has again given way, and offers at about 27s. 6d. per cwt.

CANARY-SEED.—No further business is reported.

QUILLARIA-BARK.—There are buyers under 14*l.* per ton, but there is nothing available below that figure.

BEESWAX.—A large parcel of Chilean has changed hands at 77. 7s. 6d. per cwt.

GINGER, AFRICAN.—There are inquiries on the market, but it is quite bare.

SCAMMONY ROOT.—Some parcels have changed hands at 30s. per cwt.

GRAINS OF PARADISE.—Sales of second-hand lots have been made at 35s. per cwt.

HONEY.—Sales of Pile X are reported at 32s. 6d.; Pile 1 at 25s.; and Pile 2 is held at about 23s. per cwt.

### German Drug Market.

Hamburg, September 4.

There have been only a few alterations of importance since last week.

ANISEED, RUSSIAN, is somewhat easier, as the prospects for the new crop are excellent, and a large lot of old-crop seed is offered at 34m. per 100 kilos.

ANTIMONY is unchanged. Nanki brand is offered at 37m. per 100 kilos., and Japanese Ichino Kawa at 39m. per 100 kilos.

CAMPHOR, refined, is quiet but firm. Second-hand holders ask 470m. to 475m. per 100 kilos.

CARAWAY-SEED is very firm, owing to the failure of the new crop, and prime Dutch seed cannot be had below 69m. to 70m. per 100 kilos.

ERGOT OF RYE is unchanged at 300m. to 310m. per 100 kilos.

FENUGREEK-SEED on the spot is exhausted. The cheap lots which were in the market at 10½m., are now cleared off with the exception of about 15 tons second quality, for which no buyer can be found.

LYCOPodium has stiffened again, and 435m. has been paid for prime twice sifted. New crop, September to December delivery, is offered at 380m., but these are "blanco" offers of so-called "bears," intending to depress the market.

JAPAN WAX is offered at from 64m. to 66m. per 100 kilos.

MENTHOL remains unchanged but firm at 21½m. per kilo for prime white crystals, and 21¼m. per kilo. for Kobayashi brand.

OIL, LINALOE.—Twenty-five cases have arrived per ss. *Hereynia*.

QUININE.—The speculative market is flat in conformity with London, but there is a regular consumption, and second-hand dealers obtain 52m. per kilo. net cash.

SENEGA-ROOT.—New York cables report a firmer tendency, and prices here have advanced at 335m. per 100 kilos. for Western root.

SUGAR OF MILK is offered cheaply at 95m. for best quality P.G. III.

### Cablegrams.

SMYRNA, September 4, 10.30 A.M.:—The market here is decidedly stronger, sales of about 200 cases having been made on American account at from 8s. 9*l.* for current talequale up to 9s. 2*l.* per lb., f.o.b., for Karahissar and Yerli.

\* \* \* \*

HAMBURG, September 6, 11.10 A.M.:—Refined camphor is quiet at 470m. per 100 kilos. in second hands. Cape aloes is easier at 52m. Quinine is slow of sale at 51m. per kilo. Cassia lignea is advancing.

\* \* \* \*

NEW YORK, September 6, 3.30 P.M.:—The business tone is quiet. Opium is easy at \$325 per lb. Quinine is firm at 37c. per oz. Senega-root is firmer at 34c. per lb. Golden seal (*Hydrastis canadensis*) is hardening at 55c. per lb. Ergot of rye is very quiet, 45c. being asked for fair Russian. Coca-leaves have a higher tendency at 22c. per lb. for Truxillo, and 32c. for Huancoco. Jalap is steady at 13c. per lb.; and buchu-leaves are strong at 20c. for round green. Mexican sarsaparilla is firm at 8c. per lb.; and refined camphor is in demand at 61c. per lb.

### London Markets.

ACID, CARBOLIC, keeps scarce on the spot, and little, if anything, is to be had for prompt delivery. Ordinary ice crystals, 39° to 40° C. are quoted 11½*l.* per lb. in large packages.

The exports of carbolic acid from Germany for the six months ending June have been:—

	1900	1899	1898
Kilos. ...	1,347,300	1,350,300	903,500

ACID, CITRIC.—The makers' price is nominal at 1s. 4*l.* per lb., but in second-hands business has been done to-day to a limited extent at 1s. 3½*l.* per lb.

ACID, PHOSPHORIC, is quoted by makers at from 8½*l.* to 8¾*l.* per lb. net for B.P. quality, according to package.

ACID, TARTARIC.—Quiet, at 1s. 0½*l.* to 1s. 1*l.* per lb. for English and 1s. for foreign. The season being now practically at an end new business cannot be expected until October and November, when it is anticipated that prices will be higher as the vintage prospects in Italy are by no means bright.

ANISEED.—Good Spanish is quoted 32s. c.i.f.

ARROWROOT.—Flat in auction. Twelve kegs of good Bermuda sold at 1s. 9*l.* per lb. All the St. Vincent offered (113 packages) was bought in, with the exception of a few damaged lots.

ASAFETIDA.—Fine drop is still inquired for, but nothing is offered. There is plenty of medium stuff, which is neglected and pressed for sale.

BALSAM PERU is quiet, at 6s. per lb. spot.

BLEACHING-POWDER is slow of sale, and it is difficult to test quotations in the absence of business; soft-wood, 6*l.* to 6½*l.* 5s. per ton, f.o.b. Liverpool; hardwood, 6*l.* to 6½*l.* 10s. Spot is quoted at 7*l.*

CANTHARIDES are firmer, business having been done at 2s. 1*l.* to 2s. 2*l.* per lb. c.i.f. for sifted Russian.

**CHALK.**—Finest white French powder is quoted 7s. 6d. per cwt. in 2-cwt. bags, and prepared ditto, 7s. 6d. in 2-cwt. casks.

**CHAMOMILES.**—For first-picking Belgian flowers 85s. per cwt., London terms, has been paid this week, and 72s. 6d. for seconds. The outlook does not point to lower prices yet awhile.

**CINCHONA.**—The exports from Ceylon between January 1 and August 13 were:—

	1900	1899	1898	1897
Lbs. ...	342,167	474,233	644,856	472,003
The Ned. Vcem. cinchona-bark department reports that the shipments during August, 1900, from Java to Europe amounted to 977,000 Amst. lbs., against 1,200,000 in 1899, 1,047,000 in 1898, 697,000 in 1897, 979,000 in 1896, 697,000 in 1895, 853,000 in 1894, and 636,000 in 1893. Total shipments January to August:—				
1900 ...	5,724,000 Amst. lbs.	1895 ...	5,013,700 Amst. lbs.	
1899 ...	7,230,800 "	1894 ...	5,554,000 "	
1897 ...	7,136,000 "	1893 ...	5,376,000 "	
1896 ...	4,931,000 "			

The exports from British India during the two months ended May were:—

	1900	1899	1898
Lbs. ...	1,201,659	526,001	591,998
Rs. ...	303,742	126,732	156,558

The auctions to be held in Amsterdam on September 27 will consist of 2,507 bales Ledgeriana, officialis, calisaya, hybrid and 574 bales and 130 cases Succirubra. The stock in first-hands at Amsterdam on September 5 consisted of 2,216 packages Government bark, and 3,641 packages private bark, including the quantity to be offered in auction.

**CLOVES.**—Since the good business done towards the close of last week the market for Zanzibar has been very quiet; for August-October delivery 3 $\frac{11}{16}$ d. per lb. has been paid, and there are still sellers at this figure, but no business is reported. In auction 40 bales of ordinary dark Zanzibar were held for 3 $\frac{3}{4}$ d., and good fair bright Penang, were bought in at 8d. per lb. The market is lower to-day, business having been done at 3 $\frac{3}{4}$ d., c.i.f., for shipment near at hand; there are sellers, August-October or January-March delivery, at 3 $\frac{3}{4}$ d.

**COCAINE.**—There appears to be little or nothing in second-hands. After 'Change we learn that Merck's hydrochloride has been advanced by 3s. per oz., to 21s 3d., with the usual reduction for large quantities. The pure alkaloid has also been advanced by 3s. 6d., to 24s. 6d.

**COCOA-BUTTER.**—A steady tone prevailed at the Amsterdam auctions on Tuesday. The whole quantity offered was sold as follows:—80 tons Van Houtens' at 100c. to 103 $\frac{1}{2}$ c. (average price 101.10c.), 12 tons Helm at 98c. to 100c., 4 tons De Jong at 98 $\frac{1}{2}$ c. to 99c., and 1 ton foreign brand at 96 $\frac{1}{2}$ c. to 96 $\frac{3}{4}$ c. per half-kilo.

**CUBEBS.**—The position is practically unchanged from last week, 60s. to 65s., spot, being wanted for good grey and blue berries; but buyers' ideas are more in the neighbourhood of 40s. to 45s. In one instance only is 60s. reported to have been paid last week. According to the London drug-statistics, 799 bags were delivered last month; but there is a stock of 1,057 bags remaining in the warehouse, which is quite sufficient, under normal conditions, to last four or five years, added to which there is a fairly plentiful stock at Amsterdam, which is being offered at from 40s. to 45s. per cwt., c.i.f., but quality is not fine. It is reported that the late buying has been chiefly for American account, so that the stock will still exist "on the other side," passing into jobbers' hands for sale and resale, and eventually going into consumption. Private advices from New York received to-day report up to 11c. (= to 51s. 6d. net in New York) has been paid, but the demand has since fallen off.

**ERGOT.**—Prospective offers of the new crop of Spanish are being made at 2s. 6d. to 2s. 7d., c.i.f. Russian of old crop is quoted 1s. 4 $\frac{1}{2}$ d. to 1s. 5d., c.i.f., but there is no disposition to buy at current rates. Private advices from Spain point to the fact that prices will be higher, as the demand is lasting, stocks are getting low, and sellers are unwilling to do business at the rates which prevailed about six weeks ago.

**GALLS.**—In slight demand at from 115s. to 117s. 6d. per cwt. for Persian blue on the spot. For parcels "to arrive," which are freely offered, much lower prices are asked than on the spot, but business is difficult to effect.

**GENTIAN.**—For good whole French root 15s. c.i.f. is wanted.

**GINGER.**—Very quiet in auction. No Jamaica was offered. Of Cochin washed 350 bags and 127 cases were offered, and partly sold at easier rates for washed, 131 bags selling at 29s. to 29s. 6d. per cwt. for ordinary rough washed shrivelled and wormy; fair small rough washed was bought in at 33s., and small and medium-cut at 48s.

**GUM ARABIC.**—The stocks of Soudan sorts have been considerably increased of late, and owing to lack of demand lower prices are asked. Of so-called Persian insoluble sorts sales of inferior unworked have been made at 17s. up to 20s. per cwt.

**GUM TRAGACANTH.**—In Persian descriptions of all qualities a large business has been transacted this week at steady prices. The better qualities of Bagdad gum are scarce and inquired for. The quotations are:—First, 14 $\frac{1}{2}$  5s. to 14 $\frac{1}{2}$  10s. per cwt.; seconds, 12 $\frac{1}{2}$  5s. to 13 $\frac{1}{2}$  10s.; thirds, 10 $\frac{1}{2}$  15s. to 11 $\frac{1}{2}$  10s.; fourths, 8 $\frac{1}{2}$  to 10 $\frac{1}{2}$  10s.; and yellow, 6 $\frac{1}{2}$  10s. to 7 $\frac{1}{2}$  10s.

**HYDROGEN PEROXIDE** is quoted 2s. per gal., or 1s. 8d. in carboys for 10 vols.

**HYPOPHOSPHITES.**—Lime, soda, and potash are quoted by makers at from 3s. to 3s. 3d. per lb. net, according to quantity.

**LIQUORICE-ROOT.**—Thin clean Persian, cut lengths, is quoted 14s. per cwt., but of ordinary rough there is no stock.

**MACF.**—In auction 9 packages ordinary to fair West Indian sold at 1s. 3d. to 1s. 5d. per lb. No Penang offered.

**MASTICH.**—Clean pale tear is quoted 1s. 5d. per lb., and retail sales are made from time to time at about this figure.

**MENTHOL.**—Quiet and unchanged. It is said that 10s. has been refused this week for a 10-case lot of Kobayashi.

**MORPHINE.**—The makers' price is nominal, at 5s., but there are second-hand offers at from 4s. 8d. to 4s. 8 $\frac{1}{2}$ d. per oz. net.

**NUTMEGS.**—Quiet, at steady prices. Of 39 cases and 51 boxes Penang offered in auction, 18 cases sold (11 privately), 81 to the lb, 1s. 6d., defective, 3 $\frac{1}{4}$ d. to 4 $\frac{1}{4}$ d. The remainder was bought in at 2s. 4d. for 63's, and 108 to 110's at 1s. per lb.

**OIL, ALMOND.**—English manufacturers of sweet almond oil have again advanced their price 1d. per lb., making present quotation 1s. 11d., and 2s. 1d. for pallid.

**OIL, CARAWAY.**—English makers have raised their list-price to 7s. per lb.

**OIL, CASTOR.**—Belgian of first pressings on the spot is very scarce and firmly held at 33s. to 33s. 6d. per cwt. Hull-make is 4 $\frac{1}{4}$ d. per lb. in cases for medicinal, and 32s. 6d. in barrels for first pressing.

**OIL, CUBEB.**—English oil is now quoted 4s. 6d. per lb.

**OIL, LAVENDER.**—English of new crop is quoted 35s. per lb. net, and French oil, "Mont Blanc," is offered to 5s. 10d. per lb., c.i.f.

**OIL, LEMON,** is again dearer in Messina, the equivalent of 4s. 3d. per lb., c.i.f., having been paid for prompt shipment, and 3s. 8d. for December-April delivery.

**OIL, LEMONGRASS.**—Further sales have been made this week at 3 $\frac{3}{4}$ d. per lb., c.i.f.

**OIL, PEPPERMINT.**—English of new crop is quoted at from 22s. to 24s. per lb. net, according to grower and quality. American GHG is unchanged at 5s. 2d. per lb. spot. To arrive business is reported from New York at 4s. 8d., c.i.f. Continent, but a stronger tone has since developed in the United States.

**OPIUM.**—The London market is steadier this week on receipt of news from Smyrna of an advance of about 3d. per lb., although holders' prices are unchanged at about 9s. 6d. for good druggists' quality. At the moment no

Persian gum is offered on the spot or for forward delivery, but buyers do not seem anxious, and for further shipments 13s. 6d. and probably a shade less would buy.

**PEPPER**.—Black Singapore is very quiet and barely steady with spot sellers at 6½d. per lb., October-December 6½d., and for Jan.-March 6½d. has been paid. White Singapore is also quiet, business including 10 tons at 9½d. for September-November shipment. In auction no black Singapore was offered; 88 bags of Penang were bought in at 5¾d. for light and dusty Acheen, and 200 bags fair Aleppy at 6¾d. per lb. Of Singapore white, 71 bags were bought in at 10¼d. for fine.

**PIMENTO**.—Steady in auction, 92 bags out of 540 offered selling at 3¾d. per lb. for good, and 3¾d. to 3½d. for ordinary stalky to fair.

**POTASH, CHLORATE**.—Prices have lately ruled in buyers' favour, and a fair export business (mostly to Russia) has been done at the decline. Crystals in 5-ton lots are quoted at from 3¾d. to 4d. per lb., f.o.b., Liverpool.

**QUININE**.—The shipments of bark from Java during August (although less than the corresponding month of 1899) appear to have upset the calculations of speculators on the second-hand market since our last report, with the result that there has been little disposition to operate, and practically no business was done on the first two days of the week. On Wednesday the market was characterised as "firmer," a small business being done at 1s. 6½d. for spot delivery, 1s. 6½d. for October, and 1s. 6¾d. for December. To-day prices have further improved, 1s. 6¾d. to 1s. 7d. having been paid for December and 1s. 7½d. for March. The spot price has also advanced to 1s. 6¾d.

**ROSE-PETALS**.—Either Dutch or French are quoted 3s. 3d. per lb., c.i.f.

**SERPENTARY** is quoted 1s. 4d. per lb., c.i.f.

**SHELLAC**.—At the close of last week a sale of 200 cases TN September-November shipment was reported at 55s. 6d., c.i.f., but since then no business of importance has been done, and prices are unchanged at 55s. for fair TN orange, spot, and 55s. 6d., c.i.f., to arrive. No auctions have been held this week.

**SODA NITRATE** is quiet and a shade easier, at 8s. 1½d. per cwt. for ordinary, and 8s. 6d. for refined.

**SOY**.—Chinese is steady, at 1s. 6d. to 1s. 7d. per gallon.

The exports from Hong-Kong and Canton to the United Kingdom between January 1 and August 3 have been:—

	1899	1898	1897
Casks ...	2,025	1,442	1,405

**WAX, BEES'**.—Of 22 cases ordinary yellow Jamaica offered in the spice-auctions 19 sold at 7½. 5s. per cwt.

## London Drug Statistics.

The following statistics are compiled from information supplied by public warehouses. They relate to the receipts and deliveries of some of the leading drugs from and into the London public warehouses from January 1 to August, 1900, and to the stocks on August 31.

	August		Stocks		1900	
	Landed	Delivd.	1900	1899	Imprtd.	Delivrd.
Aloes ..... cs &c.	355	243	3,176	2,295	2,079	1,567
" ..... gourd	—	—	818	1,025	2,964	2,146
Anise, star ..... cs	—	—	52	70	—	4
Balsams ..... csks &c.	205	275	362	847	1,109	1,171
Calumba ..... bgs	46	405	1,203	436	1,934	953
Camphor ..... pkgs	2,018	1,042	3,753	5,698	6,283	4,311
Cardamoms ..... cs &c.	359	278	2,520	2,454	4,017	3,204
Cinchona ..... pkgs	1,037	2,977	11,496	18,553	17,629	22,232
Cubebs ..... bgs	257	799	1,057	1,929	267	554
Dragon's blood ..... cs	21	21	117	123	98	103
Galls ..... pkgs	126	453	662	4,961	3,694	4,731
Gums—						
Ammoniacum ..	13	2	80	96	42	30
Aumil & copal ..	2,130	3,408	8,838	15,875	22,552	24,351
Arabic ..... "	3,058	1,180	13,471	10,472	14,142	12,336
Asafetida ..	5	40	667	760	748	734
Benzoin ....	174	213	1,266	1,646	2,396	2,340
Damar ..... "	43	355	4,351	4,699	2,858	2,871
Galbanum ..	—	—	14	17	—	2
Gamboge ....	—	2	262	404	62	103
Guaiaicum ..	—	6	53	55	62	60
Kauri ..... tons	267	198	1,723	1,522	1,501	1,822
Kino ..... pkgs	—	5	53	73	57	49
Mastic ..... "	—	7	9	33	—	22
Myrrh, E. I. ..	—	4	207	355	103	206
Olibanum ....	136	125	3,249	3,706	5,999	4,430
Sandarac ....	39	102	531	678	891	670
Tragacanth ..	975	796	4,202	1,863	8,541	5,375
Ipecacuanha, Rio bls	21	51	231	163	533	505
" other kinds pkgs	9	28	121	47	278	271
Jalap ..... bls	—	6	352	348	159	117
Nux vomica .. pkgs	183	42	2,632	410	3,225	576
Oils—						
*Anise ..... cs	35	13	113	215	38	112
*Cassia ..... "	—	1	118	112	76	32
Castor ..... pkgs	270	173	580	914	1,233	1,630
Cocoa-nut ..... tons	27	103	622	321	1,128	799
Olive ..... csks, &c.	200	221	714	855	1,591	1,612
Palm ..... tons	6	4	9	14	28	26
†Quinine sulph. lbs	6,124	5,564	212,940	171,777	76,018	37,643
Rhubarb ..... chts	18	96	670	1,416	271	901
Sarsaparilla .... lbs	41	55	202	392	735	831
Senna ..... bls &c.	234	329	1,667	824	4,263	4,224
Shellac ..... cs	4,678	2,888	43,774	51,633	33,160	30,955
Turmeric ..... tons	283	50	844	240	1,070	380
Wax, bees' ..... pkgs	639	602	2,202	1,500	3,099	2,822
" Japan .... cs	—	239	405	403	630	732

\* Stocks of aniseed and cassia oils lying at Smith's Wharf and Brewer's Quay are not included in this return.

† Includes the quantity at Red Lion, Bull, and Smith's Wharves; also the Docks.

The statistics of goods lying at City Commercial Wharf are not included in above returns.

**NOTES**.—There was a good demand for aloes in cases, &c., last month, the bulk of the deliveries representing Curaçao. No gourd aloes arrived, nor were any delivered. The item "balsams" conveys little information; but according to the deliveries there was a considerable business, the figures showing an increase of over 200 packages. The stock of cinchona has decreased by about 2,000 packages, while the deliveries have fallen away by nearly the same amount compared with the previous month; to date, however, 3,000 more packages have been delivered than for the corresponding eight months of 1899. The stock of quinine is practically unchanged; the deliveries fell off by 20,864 oz. and the imports were almost double those of August, being 97,984 oz., against 58,992 oz. Camphor was in better demand last month, the increased deliveries being 774 packages; but the landings also increased by 400 packages. Cardamoms have not maintained the improved deliveries of July, and stock is slightly larger; they are coming along in fairly abundant quantities. A delivery of 799 bags cubebs in one month is excellent, and it would be necessary to refer back beyond the past six years for so heavy a record. The stock of dragon's blood is unchanged compared with July, and but little of it is fine quality. Arrivals have only been moderate since the beginning of the year. For the past two or three months there has practically been no demand for gamboge; but, on the other hand, there were no importations during July or August. The demand for myrrh also appears to have fallen away. The deliveries of Rio ipecacuanha are on a par with those of July, but of Cartagena there was an increased delivery of 13 bales; imports of Rio have greatly shrunk.

## Trade-Marks Applied For.

Objections to the registration of any of the undermentioned applications should be lodged with C. N. Dalton, Esq., C.B., Comptroller-General of Patents, Designs, and Trade-marks, at the Patent Office, 25 Southampton Buildings, Chancery Lane, London, W.C., within one month of the dates mentioned. The objection must be stated on Trade-marks Form J, cost 1s., obtainable through any money-order office.

From the "Trade Marks Journal," September 5, 1900.)

"SERINGA" and sketch of flower; for chemical substances. By the Rubber Chemical Company, Seringa Mills, Mitcham Common, Surrey. 230,545.

"PHOSPHERINE"; for chemical substances. By Ashton & Parsons (Limited), 17 Farringdon Road, London. 232,245.

Signature of applicant; for chemical substances, and perfumery and toilet articles. By A. Finlay, 24 Victoria Square, Belfast. 232,585, 232,586, 232,588.

"KEUTY'S," and wording and device on label; for patent medicine. By Keuty & Co., 18 Melbourne Lea, Halifax. 230,477.

"KAPLOID"; for drugs, &c., liquid and compressed. By Quick & Co. (Limited), 29 Marylebone Lane, London. 231,673.

**PERLOIDS! PERLOIDS! PERLOIDS! PERLOIDS!**

**HOMŒOPATHIC MEDICINES**  
IN PERLOID FORM

Sell better than Tinctures or Pilules. They are exact in dose, there is no trouble in dropping, or with the use of water. Convenient to prescriber and patient alike.

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in the  
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LIBERAL TERMS.

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EACH BOTTLE  
RETAILS  
AT ...  
**1/- Net.**  
Correspondence Invited.

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**INDIAN PERLOIDS**  
Are specially prepared to resist hot, moist climates, and  
**Are Invaluable to Travellers.**  
They keep good in any climate.

**KEENE & ASHWELL, MANUFACTURING CHEMISTS, 74 NEW BOND STREET, LONDON**

# ROBARE'S AUREOLINE

## Or GOLDEN HAIR WASH.

4-oz. Bottles, 33/-; 10-oz. Bottles, 66/- per doz.

Wholesale from R. HOYENDEN & SONS, LTD., and from all the principal Patent Medicine Warehouses in London.

# COLLAPSIBLE TUBES.

A great variety of attractive colours and designs.

We offer special facilities to Chemists for putting up their own preparations in beautifully coloured and attractive tubes. Our Filling Machine will manipulate a few tubes as well as it does a larger number.

We print Chemists' names and other wording on the tubes without charging for the die for orders of 3 to 4 gross, and also hold a stock of tubes printed with names of contents.

When a special design is required the die is charged for, and the most artistic designs are supplied for quantities of 7 gross and upwards.

**COLOURING.**—The tubes are supplied in three varieties of colours—transparent bronze, dull bronze, and enamel.

## TUBE FILLING MACHINE, 20/- NET.

# CACHETS & KOSEALS.

Plain white or coloured, printed or embossed. Koseals require no special care in moistening.

### Glasscine Labels.

**Glasscine - -  
- - Labels**

### Glasscine Labels

These are transparent like glass, but flexible.  
They are easily affixed to Shop Rounds, and they cannot be broken.

Are supplied—  
1 gallon size at 6/- doz. net.  
Smaller sizes at 5/- " "

**GLASSCINE LABELS** are finished on the reverse side, the same as Glass Labels, and are gilded in Pure Gold Leaf. They are lettered by hand, exactly the same as the glass ones. They are a perfect Glass Label; the only difference is the flexibility.

**THOMAS CHRISTY & CO.,**  
**4, 10 & 12 OLD SWAN LANE, UPPER THAMES ST., E.C.**

# BRUNNER, MOND & Co.'s

Alkali  
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Crescent  
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These products are made by the Ammonia Process, and are distinguished from others by their great purity.



## Bicarbonate of Soda.

A pure, refined, and recrystallised salt is particularly notable by its freedom from metals, or any base other than soda. Gives no appreciable reaction for sulphates, and contains not more than 0.035 per cent. of sodium chloride, a trace which scarcely gives "the slightest characteristic reaction" of the B.P.

This sodium bicarbonate is well adapted for the preparation of granular effervescent preparations and salines, seidlitz powders, baking powders, and for other medicinal and domestic purposes. It is the purest and cheapest sodium bicarbonate made.



## Concentrated Crystal Soda.

This sodium compound (sodium sesquicarbonate) is a variety of carbonate of soda in small silky crystals, containing much less water than ordinary washing soda; 1 lb. of it does the work of 2 lbs. of washing soda. Concentrated crystal soda is excellently suited for chemists' trade; they can make a speciality of it, and it is also suited for making water-softeners, brush powders, hair-wash powders, and the like.



## Pure Alkali, 58 degrees.

A dry white powder; dissolves quickly and easily in water, making an excellent detergent for use by printers, bleachers, dyers, and for bottle washing. Is nearly equal to 99 per cent. carbonate of soda; is much used by glass, paper, and soap makers. The best alkali for soap powders and washing powders.

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Soda  
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Caustic  
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Bleaching  
Powder.

Manufactured from pure Carbonate, and  
supplied of all degrees of strength.

Retailers can obtain these products through any Wholesale house by specifying Brunner, Mond & Co.'s "Crescent" Brand. The manufacturers supply wholesale quantities only, and will quote on application to

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# RESINOL { An Ideal Ointment. A Perfect Dressing.

Put up in two sizes, 2/6 and 4/6.

**UNRIVALLED as an Antipruritic, Antiseptic, Antiphlogistic, Nutrient, &c.**

**A Specific for Pruritus Ani, Pruritus Vulvae, Eczema, and all Itching or Inflamed Skin Affections.**

ENDORSED BY THE MEDICAL PROFESSION, AND SOLD BY ALL CHEMISTS.

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An ABSOLUTELY PURE, Non-irritating, Emollient, and Preservative Detergent.

The Best Soap for the Skin, the Hair, Scalp, &c. Promptly removes odours from handling Chemicals, Wounds, &c.; also a superior Shaving Soap.

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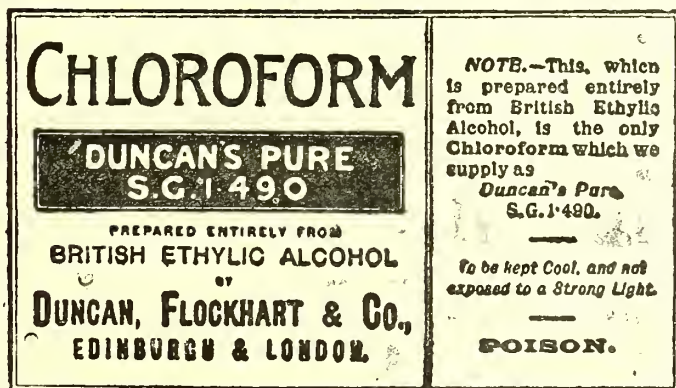
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FOR METHYLATED  
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CHLOROFORM  
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## FOR CHILDREN TEETHING.

Greatly facilitates the process of Teething, by softening the Gums, reducing all Inflammation; will allay  
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**SURE TO REGULATE THE BOWELS.**

Depend upon it, Mothers, it will give rest to yourselves and

## RELIEF & HEALTH TO YOUR INFANTS.

**Mrs. WINSLOW'S SOOTHING SYRUP**

Has been used for over Fifty Years by millions of Mothers for their children while Teething with perfect success.  
It soothes the child, softens the gums, allays all pain, cures wind colic, and is the best remedy for diarrhoea.

RETAILED BY CHEMISTS ONLY.

Wholesale from **THE ANGLO-AMERICAN DRUG COMPANY (Limited),**  
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CARBONATE, CALCINED, AND FLUID.

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**WHOLESALE AND EXPORT DRUGGISTS,**

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Beg to inform their friends and the Trade generally that, being Sole Proprietors of the Business of

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they are prepared to execute orders for the same, and pledge themselves to supply them in all their integrity.

SPECIMENS OF THESE PREPARATIONS have REMAINED in the MUSEUM of KEW GARDENS during 28 YEARS  
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## "SWEET" PEARL COATED PILLS.

### TINCTURES, ETC., IN BOND.

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## Thirty Years of Confidence

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IS THE

## REMEDY—PAR EXCELLENCE—

in Anæmia, Neurasthenia, Bronchitis, and  
Influenza, and during Convalescence  
from exhausting diseases.

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IT CONTAINS—

HYPOPHOSPHITES OF IRON, QUININE, STRYCHNINE, LIME, MANGANESE, AND POTASH.

Each fluid drachm contains the equivalent of 1-64th grain of pure Strychnine.

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Fellows' Syrup of Hypophosphites is NEVER SOLD IN BULK, and  
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### CREAM EMULSION of COD-LIVER OIL

With Hypophosphites.

Each fluid ounce contains:—  
Finest Cod liver Oil, 3ss.  
Hypophosphite of Calcium, gr. iii.  
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(Testing 50 per cent. Cod-liver Oil.)

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Each fluid ounce contains:—  
Chemically Pure Petroleum, 3ss.  
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(Testing 50 per cent. Pure Petroleum.)

These Emulsions are of the very highest character and do not separate.  
Supplied in Bulk, also in Bottles of various styles and sizes for Retail sale.

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MANUFACTURING CHEMISTS,

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Guaranteed to Cure a Cold in One Day or money refunded.

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Guaranteed to Cure any case of Piles no matter of how long standing.

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Will be advertised this Autumn in nearly every newspaper in Great Britain and Ireland. Chemists stocking this preparation run no risk, as we guarantee them in every way. If you find yourself overstocked after a reasonable time notify us and we will tell you where to ship the goods and send you a cheque for the amount which you paid for them.

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WITH INSCRIPTIONS IN ANY  
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In Nine Sizes. Also made to fit existing machines.

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New  $1/1\frac{1}{2}$  Size.

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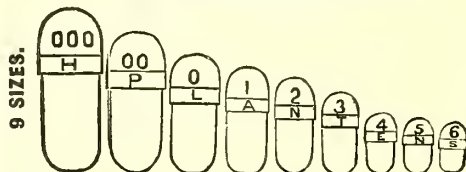
Apply for NEW SHOWCARDS and DUMMIES, now being sent out as fast as possible. (State number required for 2/9 and  $1/1\frac{1}{2}$  sizes.)

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For the administration of Powder, Solid, or Liquid Medicines.  
FOR POWDERS OR SOLIDS.



EMPTY FOR LIQUIDS (FLEXIBLE),  
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Can be obtained through any Wholesale House.

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# BEESWAX.

### PURE REFINED BEESWAX.

"W. H. B."

In 2 lb. cakes in cases of about 130 lbs.  
" 1 " " " 130 "  
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" 1/4 " " " 130 "  
" 1 oz. cakes in 2 lb. parcels in cases of 54 "  
French Refined, in 1 lb. cakes in cases of 130 "

Our customers only are our agents. Weights and quality guaranteed. Free on rail in Liverpool. Ex Quay London, Glasgow, Bristol, and Hull.

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Cable Address—"BOWDLEAR BOSTON."

### PURE WHITE BEESWAX.

"W. H. B."

In cases of 54 lbs.  
In round cakes in 2 lb. parcels, or in oblong cakes loose.  
In 1 oz. cakes in 2 lb. parcels.  
Plain blocks of 7 1/2 lbs. in cases of 250 lbs.  
White Wax.—Plain round cakes in 2 lb. parcels in cases of 72 lbs.

The Consumers of the W. H. B. Yellow or White Beeswax may have an analysis by Dr. BERNARD DYER, 17 Gt. Tower Street, LONDON, E.C., or E. DAVIES & SON, 18 Chapel Street, LIVERPOOL, annually at the expense of the MANUFACTURERS.

Telegrams: "PHARMACY MANCHESTER."

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Manufacturing Pharmaceutical Chemists,  
**WHOLESALE & EXPORT DRUGGISTS.**

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CHEMICAL, PHYSICAL, AND PHOTOGRAPHIC APPARATUS.

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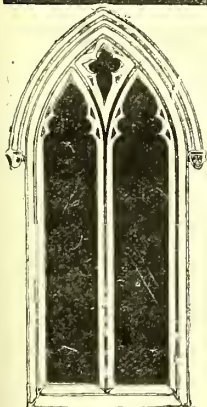
PROPRIETARY MEDICINES, DRUGGISTS' SUNDRIES, &c.

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Laboratories and Drug Mills—KNOWSLEY STREET, CHEETHAM.

PRICES CURRENT OF DRUGS and CATALOGUE OF DRUGGISTS' SUNDRIES and  
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157,810.

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Of late a spurious article has been offered for sale, put up in imitation of the genuine one even to copying the Pamphlet, Wrapper, and Labels. To protect the public from, and facilitate proceedings against, such frauds, the Proprietor has registered the Trade Mark here shown, a reduced copy of which will be found on the outside label on every bottle put up after this date. As a further security, the name "DR. BOW'S LINIMENT" (also a Trade Mark) appears in the Government Stamp.

BARCLAY & SONS, LIMITED, LONDON  
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# "FEROCAL."

To distinguish more readily Squire's Chemical Food from all other brands of Chemical Food, the registered word "Ferocal" will in future be added to the label.

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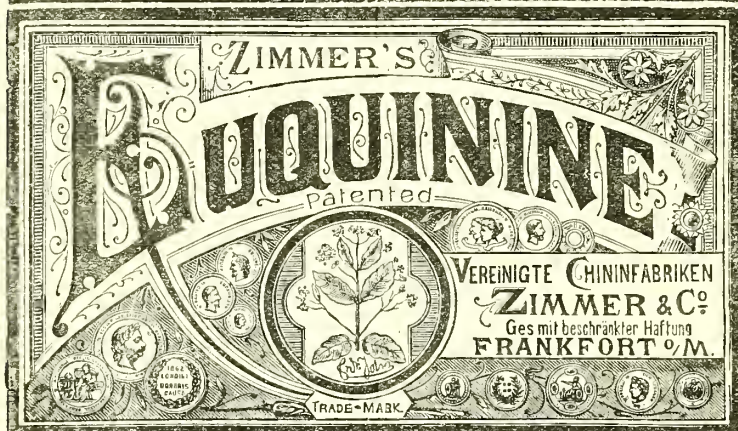
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*TEREBENE, P.B. and Optically Inactive,*

**BISMUTH AND MERCURIAL PREPARATIONS,**

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And Chemicals for Scientific and Technical Purposes. <sup>121</sup>



**TASTELESS QUININE**  
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**EUQUININE** (the Ethyl-carbonate of QUI-  
NINE).

**EUNATROL PILLS** (chem. pure Oleate of  
Sodium). Bile stimulant,  
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**VALIDOL** (Valerianic Acid and Menthol).  
Antiasmatic, Antihysterie. Reliable  
preventive against Seasickness, as proved in  
numerous cases.

**UROSINE** (Quinic Acid and Lithia). Prevents  
formation of uric acid. For Gout, and  
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For Free Samples of above Preparations and Literature  
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(HEWLETT'S).

**THE ORIGINAL PREPARATION.**

*Report of "THE PRACTITIONER" :-*

"Experience has shown this preparation to possess the same efficacy as Santal Oil itself. It mixes perfectly with water, and has a taste by no means disagreeable, in which particular it contrasts very favourably with the ordinary mixture it is intended to replace."

To ensure obtaining this preparation, please write: "Liq. Santal Flav. c. Buchu et Cubeba (Hewlett's)."

Price 10s. 6d. per lb. packed, for dispensing only, in 10, 22, 40, and 90-oz. Bottles.

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New Season's **GREEN EXTRACTS** ("Anchor Brand")

**HENBANE**

Prepared from Second Year's Growth  
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**BELLADONNA**

From English-grown Herb of  
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# PIERLOT'S VALERIANATE of AMMONIA.

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# KOLA-ASTIER

(Granulated).

Contains all the active principles of the Kola Nut, Caffeine, Theobromine, Kola Red and Tannin in a soluble, agreeable, and portable form. Recommended as a reconstituant and stimulant of the physical and mental forces.

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FOREIGN CHEMISTS, Ld.

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APPLICATION.**

WHOLESALE IMPORTERS & EXPORTERS OF ALL  
**FRENCH and GERMAN**  
SPECIALITIES AND  
**PROPRIETARY MEDICINES.**

**GOODS NOT  
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Wholesale Depot for

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APIOL CAPSULES.  
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**CAPSULES.**— Santal Wood Oil,  
Creasote, Copaiba, Phosphorus,  
Guaiacoli, Ether, &c., in bulk or  
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DECLAT'S SYRUPS.  
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GRANULES.

RAMIS SYRUP & PATE.

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# CAPSULES

with those which you now pay,

and write for complete list.

	Per 1,000	Boxes of 36 per doz	24 per doz.
Cascara Sagrada = 30 m fl. Ext. ...	10/-	6/6	4/7
Copaiba, mv ...	5/-	3/9	2/6
" mx ...	7/3	5/-	3/9
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" " " " mlii	8/6	5/11	4/1
Ammoniated Quinine = 30m Tinct. ...	12/6	8/-	5/7
Santalwood Oil, mv ...	18/-	11/-	7/7
" " mx ...	24/-	14/-	10/-
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The Hon. Surgeon to his Excellency the Viceroy of India prescribes "CLARKE'S BLOOD MIXTURE" largely, and speaks highly of its efficacy in skin affections, &c.—A. JOHN & CO., Chemists, &c., Agra, India.

Counter Bills and Posters, with Name and Address, also Show Cards, on application. Printed matter supplied in any language for Foreign Agents.

**CAUTION.**—Immediate proceedings will be taken against all persons pirating the Trade Mark, "Blood Mixture" (Registered No. 3,275), Labels Wrappers, Bills, or Advertisements, or in any way infringing the rights of the Sole Proprietors,

THE LINCOLN & MIDLAND COUNTIES DRUG CO., LINCOLN, ENGLAND.

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**THE SAFEST AND BEST PREPARATION OF OPIUM.**

**PRODUCES NEITHER HEADACHE, SICKNESS, NOR CONSTIPATION;  
PREPARED EXCLUSIVELY FROM OPIUM.**

Although many new hypnotics and analgesics have been recently introduced, NEPENTHE still holds its position as the hypnotic and sedative par excellence. "Nepenthe" is registered under the Trade Marks Act, and is our sole property. No other preparation should be substituted when Nepenthe is ordered in a prescription.

Sent out in bottles bearing a label in white letters upon a green ground. We prepare also Double Strength Nepenthe, and Glycerols of Nepenthe (eight times the single strength) for hypodermic injection.

**PRICES AND TERMS ON APPLICATION.**

**FERRIS & CO.,** WHOLESALE AND EXPORT DRUGGISTS, **BRISTOL.**

**THE LEADING LINE IN PATENTS.**

**QUICKEST SALES.**

## BEECHAM'S PILLS

May now be had in **£5** Lots, at Lowest Prices, Carriage Paid. Packages Free.

**ORDERS** must be accompanied by Cash. Cheques to be made payable to Thomas Beecham, and crossed "Parr's Bank, Limited, St. Helens."

<b>PRICES.</b> —Beecham's Pills, 9½d. size (36 pills)—	PER DOZ. NET.
13½d. " (56 " )—	7/-
2s. 9d. " (168 " )—	9/6
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**ADVERTISING MATTER** to suit Retailers' requirements will be sent on application.

**ADDRESS—THOMAS BEECHAM, ST. HELENS, LANCASHIRE.**

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*Oleum Santali.*

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"RELIABLE."

(Recommended & prescribed by many eminent Physicians.)

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Speciality.

(ABSOLUTELY PURE.)

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**TO CHEMISTS.****NOW IS THE TIME**

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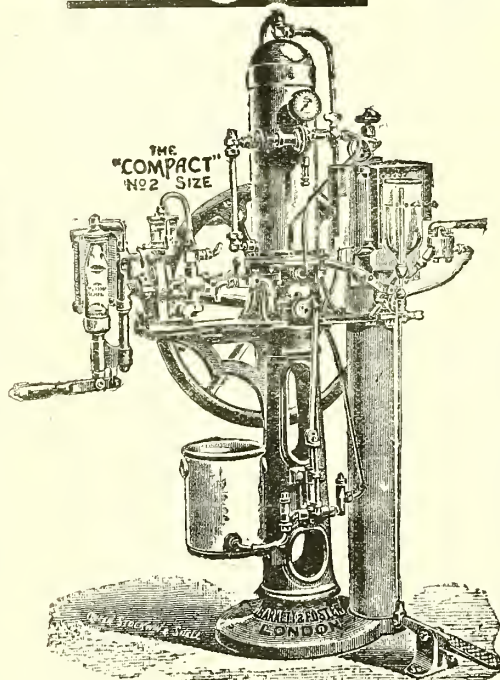
**"Compact" Soda-Water Machine**

FOR USE WITH COMPRESSED CARBONIC GAS.

These Machines were specially designed for use where space is an object.

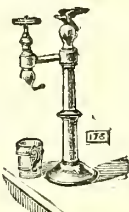
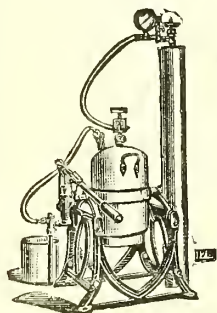
**READY FOR IMMEDIATE WORK. NO FIXING REQUIRED.  
NO DANGER. PERFECTLY RELIABLE.***Although inferior imitations have been offered, these  
Machines still beat all Competitors.*

NOTE.—We guarantee to produce a better article with these than any other system adapted for using the Liquefied Gas, and at a lower pressure, thus effecting an immense saving in broken bottles, and also reducing risk of accidents.



No. 1 Size.—Fitted with Syphon Filling Machine ...	£57 0
No. 1 „ „ Filling Machine for Ball-Stoppered Bottles only ...	59 2
No. 1 „ „ both above Filling Machines ...	62 2
Fast and Loose Pulleys included.	
No. 2 „ „ Syphon Filling Machine ...	45 0
No. 2 „ „ Filling Machine for Ball-Stoppered Bottles, with Syrup Pump ...	47 2
No. 2 „ „ both above Filling Machines ...	50 2
Fast and Loose Pulleys extra.	
No. 3 „ „ Syphon Filling Machine ...	33 0
No. 3 „ „ Filling Machine, with Syrup Pump, for Ball-Stoppered Bottles ...	35 2

NOTE.—Syrup Pump can be fitted to Syphon Filler if required.

**THE "CYLINDER" SODA-WATER PLANT.**

This is a cheap apparatus for use with Compressed Carbonic Acid Gas for serving Soda Water on the counter by means of the draught arm.

From £15.

**THE "LONDON-MADE" SYPHON****BEST BOHEMIAN CRYSTAL VASES.**

Pure Tin Tops.

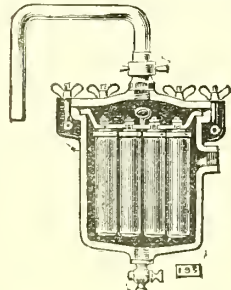
No admixture of Lead in any part of Syphon.

Carriage Paid Quotations upon receipt of specification.

**"NIAGARA" MICROBE-PROOF FILTERS.**

Complete Catalogue of these Filters Post Free.

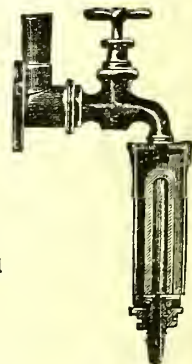
The most Reliable, Strongest, and Quickest Filter on the Market.



Output per hour.	
No. 1.—20 gallons ...	£1 17 6
No. 3.—60 „ ...	3 12 6
No. 5.—100 „ ...	5 10 0
No. 9.—180 „ ...	7 10 0
No. 15.—300 „ ...	12 10 0

**TAP FILTER.**

Complete with Screw-down Cock and Glass Case for Filter Tube,

**16s.**

ALSO SUPPLIED FOR TABLE AND HOUSEHOLD USE.

Illustrated Descriptive Catalogue of every requirement for the Mineral Water Trade on application.

**BARNETT & FOSTER, NIAGARA WORKS, 26<sup>th</sup> EAGLE WHARF ROAD, LONDON, N.**

**TELEPHONE 68 DALSTON,**

**OR**

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**"PLAYFELLOW LONDON"**

**"PLAYFELLOW MANCHESTER"**

**"PLAYFELLOW NEWCASTLE-ON-TYNE"**

**FOR**

# **Carbonic Acid Gas**

**THE CARBONIC ACID GAS CO.**

**LEA BRIDGE ROAD, CLAPTON, LONDON, N.E.**

**POLLARD STREET EAST, ANCOATS, MANCHESTER.**

**SKINNERBURN ROAD, LOW ELSWICK, NEWCASTLE-ON-TYNE.**

# NATURAL MINERAL WATERS.

**PACKING  
FREE.**

## INGRAM & ROYLE LTD.

**CARRIAGE  
PAID.**
**LONDON—EAST PAUL'S WHARF, 26 UPPER THAMES ST., E.C.**
**LIVERPOOL—19 South John Street.**
**BRISTOL—Bath Bridge.**
**STATE**

# CARLSBAD VICHY HUNYADI-JANOS

**SPRINGS**

NAME	Per Dozen		Original Packages		NAME	Per Dozen		Original Packages	
	Large	Small	Large	Small		Large	Small	Large	Small
Abrolis (not car. paid)	5/-	4/-	50	18/-	100	27/6			
*Æsculap .. ..	15/-	12/-	25	30/-	50	50/-			
Apenta .. ..	10/-	8/3	25	20/-	50	32/6			
Apollinaris .. ..	6/-	5/-	50	23/-	100	36/-			
Bourboule (La) ..	11/-	—	50	42/-	—	—			
CARLSBAD .. ..	12/-	—	50	46/-	—	—			
CONTREXEVILLE ..	9/-	—	50	35/-	—	—			
Ems .. ..	7/-	—	50	28/-	—	—			
Evian .. ..	8/6	—	60	40/-	—	—			
Fachingen .. ..	7/6	—	50	29/-	—	—			
Flitwick .. ..	19/-	12/-	—	—	—	—			
*Franz-Josef .. ..	12/-	10/-	25	22/6	50	35/-			
Friedrichshall ..	12/6	10/-	25	25/-	50	40/-			
Gichtwasser (Wiesbaden)	12/-	—	—	—	—	—			
Gerolstein .. ..	5/-	4/-	50	20/-	50	16/-			
HUNYADI-JANOS ..	12/-	10/-	25	22/6	50	35/-			
Ditto (5 case lots) ..	—	—	25	21/-	50	32/-			
Johannis .. ..	5/6	4/-	50	20/-	100	32/-			
Kronequelle .. ..	9/-	—	—	—	—	—			
Levico .. ..	—	18/3	—	—	—	—			
Oberbrunnen .. ..	8/6	—	50	35/-	—	—			
Pullna .. ..	12/-	8/-	40	36/-	—	—			
Reisdorf .. ..	5/6	4/6	50	22/-	100	35/-			
Rosbach .. ..	5/6	4/-	50	20/-	100	32/-			
Royat .. ..	9/-	—	50	34/-	—	—			
Rubinat .. ..	15/-	11/-	25	30/-	50	45/-			
St. Galmier .. ..	6/-	4/6	50	22/-	100	34/-			
St. Marco .. ..	11/-	—	50	42/-	—	—			
St. Ronans (not car. pd.)	5/-	3/4	—	—	—	—			
Salutaris (not car. paid)	4/-	2/6	—	—	—	—			
Selters (Ober) .. ..	6/-	4/6	50	24/-	50	17/-			
Taunus .. ..	5/-	4/-	50	20/-	100	30/-			
Vals .. ..	9/6	—	50	38/-	—	—			
VICHY (State Springs), "Celestins," "Grande-Grille," &c.	8/6	6/6	50	33/-	50	25/-			

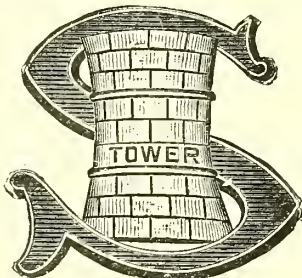
Discount allowed on London Orders. Abrolis, Apollinaris, Apenta, Franz-Josef, Friedrichshall, Hunyadi-János, Levico, St. Ronans, and Salutaris strictly Nett.

\* Special Price for 10 case lots.

Detailed Price List and Pamphlet on application.

# STOWER'S LIME JUICE

See that each Bottle bears the  
**REGISTERED TRADE MARK,**  
and also the Signature (in Red) of the  
**SOLE MANUFACTURERS.**



*Alex Riddle & Co.*

## SOME REASONS FOR STOCKING.

- It is the ORIGINAL.
- It is absolutely PURE.
- It is attractively PUT UP.
- It is largely ADVERTISED.
- It is in great DEMAND.
- It is supplied to HER MAJESTY.
- It has been specially selected for the Hospital Ships "PRINCESS OF WALES" and "MAINE," and the Imperial Yeomanry Base Hospital.
- It is exclusively recommended by the MEDICAL PROFESSION.
- It is supplied to all the principal HOSPITALS.
- It takes up no time to Sell.
- It leaves a Fair Profit.

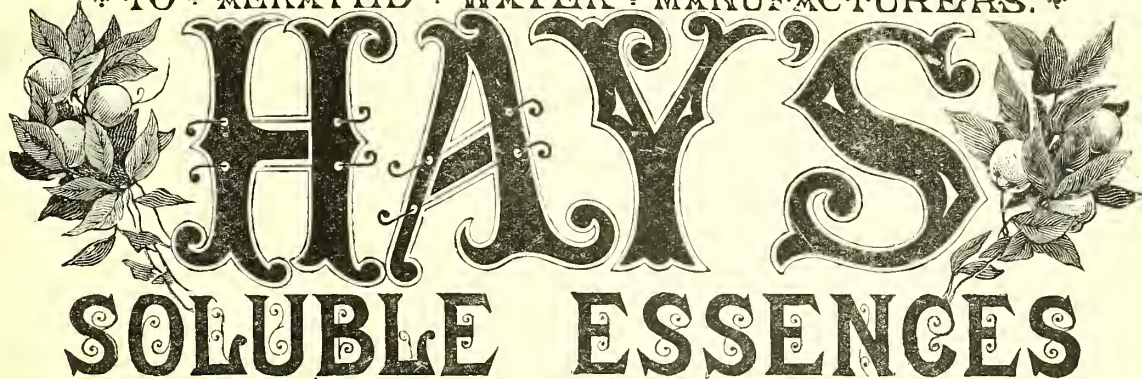
**FREE TASTING SAMPLES AND COUNTER BOTTLES,**  
Handsome Show Cards, Attractive Bills,  
and other Advertising material liberally and  
freely supplied to the Trade.

*Sole Manufacturers and Proprietors,*

**ALEXANDER RIDDLE & CO., LTD., 36 & 38 COMMERCIAL ST., LONDON, E.**

# WILLIAM HAY, LIMITED.

TO AERATED WATER MANUFACTURERS.



ARE GUARANTEED TO BE THE FINEST IN THE MARKET.

*Special Terms to Exporters of*

HAY'S SOLUBLE ESSENCES OF GINGER,  
 HAY'S SOLUBLE ESSENCES GINGER ALE,  
 HAY'S SOLUBLE ESSENCES LEMON,  
 HAY'S GINGER ALE EXTRACT,  
 HAY'S KOLA, LIME JUICE, and ORANGE  
 JUICE CHAMPAGNE ESSENCES,  
 HAY'S LEMON SQUASH ESSENCE,

*For the Manufacture of*

**DELICIOUS NON-ALCOHOLIC BEVERAGES.**

Orders for Two Gallons and upwards of one kind of Essence may be shipped under Bond.

*Indentors when ordering should specify HAY'S manufacture.*

**GOLD <sup>and</sup> SILVER  
 MEDALS**

HIGHEST TESTIMONIALS FROM ALL THE MEDICAL JOURNALS  
 THESE ESSENCES ARE UNRIVALLED FOR THEIR EXQUISITELY FINE FLAVOR AND AROMA



HARE

**Manufacturing Chemists, HULL and LONDON.**

Established  
1855.

**ROBINSON'S ORIGINAL**

Excise Drawback on  
Export Orders.

# CONCENTRATED WATERS.

**STANDARDISED TO B.P. 1898.**

When diluted in the proportion of one part to forty parts of water at 60° temperature, they faithfully represent the Medicated Waters of the British Pharmacopœia. They are always of uniform strength, and will keep good any length of time in any climate.

Aqua Amygd. Amar. Cono. (U.S.)	-- 4/- per lb.	Aqua Cassia Cono. ..	-- 4/- per lb.	Aqua Ment. Virid. Cono. ..	-- 4/- per lb.
" Anethi, Concent.	-- 4/- "	" Flor. Aurant. ..	-- 8/8 "	" Pimentæ "	-- 4/- "
" Anisi "	-- 4/- "	" Sambuci Cono. ..	-- 8/8 "	" Pulegii "	-- 4/- "
" Camphoræ "	-- 4/- "	" Fœniculi Cono. ....	-- 4/- "	" Rosmarini "	-- 4/- "
" Carui "	-- 4/- "	" Ment. Pip. Cono. ..	-- 4/- "	" Rose "	-- 5/8 "
" Cinnamon. Ver. Cono.	-- 6/- "	" " Ang. Cono. ..	-- 8/- "	" " Virgin "	-- 10/8 "

The above may be had in 1-lb. or 1-lb. Bottles and upwards, through most of the Wholesale Drug Houses.

Each Bottle has the Inventor's Protection Label over the cork, without which none are genuine.

## SUPERIOR ORANGE WINE (Vin. Aurantii, B.P. 1898).

Samples of any of the above sent free on application from

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## A. MILLAR & CO., LTD., DUBLIN PURE ORANGE WINE

(VINUM AURANTII, B.P.), prepared in strict accordance with the Formula of the British Pharmacopœia.

## DOES A HANDSOME PROFIT

and an able and substantial line added

## TO YOUR BUSINESS INTEREST YOU ?

If so, let us know.

Our Coca Wines, Meat and Malt and Invalid Wines are sold by **1,500** Agents in the **United Kingdom** alone.

Our Get-up is the Best. Our Goods are Perfection in Quality, &c.

We are the **Largest Bottlers**, and can therefore guarantee the highest quality.

## HAVE YOU A LICENCE ?

If not, you are behind the times.

**WRITE TO US. WE STILL CAN APPOINT GOOD AGENTS.**

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A POSTCARD WILL ENSURE YOU ALL PARTICULARS.

We shall be pleased to quote you for Cherries, Ports, Burgundy, Clarets, in Bottle or Bulk.

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Has it ever occurred to you how wilfully blind you are to your own interests in neglecting to avail yourself of the advantages that CAMWAL, LTD., offers?

## **A VALUABLE CHEMIST'S PROPERTY.**

TO CHEMISTS WHO ARE INTERESTED IN THE SYPHON TRADE.

***In CAMWAL Table Waters Chemists possess a most valuable property.***

**Firstly**—Because CAMWAL Waters are not supplied to ordinary retailers; the Chemist, therefore, where he has introduced the CAMWAL Brand, cannot lose customers to Grocers, Wine Merchants, &c.

**Secondly**—CAMWAL, LTD., can prove to any Chemist who hesitates to join, that those who have introduced CAMWAL Waters have greatly increased their sales, and that it is quite a common thing for Chemists dealing in this, their own brand, to do from 12 to 24 dozen weekly, where they used to do less than half that quantity when dealing in a brand that every retailer in their neighbourhood was stocking.

**Thirdly**—CAMWAL Waters are made by Analytical Chemists for Chemists, and the demand for them by the discriminating consumer is steadily increasing; do not, therefore, refuse to supply, and so retard the sale and popularity of one of the few valuable properties possessed by Chemists.

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**LIMITED**

**Factories: LONDON, MANCHESTER, BIRMINGHAM, BRISTOL, HARROGATE, MITCHAM.**  
**Head Offices: 112 PEMBROKE ST., LONDON, N.**

# CHINBARA DIGESTIVE TEA.

This Tea is manufactured FOR CHEMISTS ONLY on a group of Proprietary Estates and prepared on strictly scientific principles—the essential result being the reproduction “in a Ceylon Tea” of the Purity and Delicate Flavour for which the old finest China Teas were once so celebrated.

CHINBARA is neither a Medicated Tea nor a Blend.

If it is asked what claim CHINBARA TEA has to the title “DIGESTIVE,” the reply is contained in the following letter addressed to the Proprietor:—

“Kelverstone, Bath, 24th July, 1900.

“DEAR SIR,—For many years I have been shy of afternoon tea, except when taken unpalatably weak, because I found myself sleepless in consequence. This cause and effect I proved over and over again. But with your Tea no such sleeplessness follows, and at home I can be quite safe in drinking it in ordinary strength at five o'clock. Your method of preparation must be markedly different from that of other Teas for so distinct a difference in its effect upon the nerves.

“Believe me, yours very truly, L . . . S . . . .”

CHINBARA AGENCY.—Full particulars to Chemists who are prepared to take up the sale of this Tea will be found in the Summer Number of THE CHEMIST AND DRUGGIST, page 55, or by application to the

PROPRIETOR, 5 VICTORIA AVENUE, BISHOPSGATE ST. WITHOUT, LONDON, E.C.

This important evidence has led the Proprietor to submit samples of “Chinhara” to an eminent analyst, who reports as follows:—

“London, August 4th, 1900.

“I have chemically and microscopically examined a sample of ‘Chinhara’ Tea, and find that it is absolutely pure. The microscopical examination proved the leaves were collected at the same stage of growth, hence the Tea is of uniform quality. Many Teas, through bad curing, &c., contain acid decomposition products which greatly interfere with digestion. ‘Chinhara’ Tea is entirely free from these noxious products, consequently the infusions of this Tea do not in any way lead to disturbances of the digestive function. ‘Chinhara’ Tea produces a refreshing and restorative beverage, with a fragrant taste. I can strongly recommend this excellent and invaluable brand of Tea.

“A. B. GRIFFITHS, Ph.D., F.R.S.E.”

## A PACKET THAT SELLS.

# TOWER TEA.

String-tied Paper Packet.

Airtight Paper Bag.

Superior Lead Packet.

From **1/4** per lb.

From **1/2** per lb.

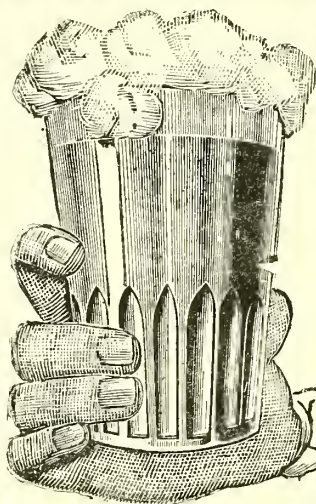
From **1/8** per lb.

GOOD PROFIT TO THE RETAILER.

SEND FOR SAMPLES AND NEW PRICE LIST.

**TOWER TEA, LIMITED, 71 EASTCHEAP, LONDON, E.C.**

The  
Biggest,  
Best,  
and  
Cheapest  
Drink!



**MASON'S  
EXTRACT OF HERBS**

**8 GALLONS**  
of non-intoxicating  
**BEER FOR 6D.!**

BEWARE OF USELESS IMITATIONS.

**A Splendid Drink!**

**MASON'S  
EXTRACT  
OF  
HERBS**

FOR MAKING  
**NON-INTOXICATING  
BEER.**

DELICIOUS INVIGORATING BEVERAGE.

Always Refreshing.

Always Acceptable.



AGENTS  
WANTED.

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CARRIAGE PAID BOTH WAYS.



Scale		NO CUTTING OF PRICES PERMITTED.		NET TRADE PRICES for Cash with Order.						In Minimum Quantities of	
		Retail prices on application.		* Cases and Bottles (returnable) charged extra as below.							
		Per doz. Quarts	Per doz. Pints	Per doz. Nips	Per doz. Syphons	Per gall. in Case of 2 Jars	Per gall. in Case of 4 Jars				
		24	1/5	13	4/-	7d.	6d.	{ 1 doz. Qts., 2 doz. Pts., 4 doz. Nips, 1 doz. Syphons, 1 Case of 2 1-gall. Jars, 1 Case of 4 1-gall. Jars.			
		DISTRIBUTING AGENTS WANTED.									
		Single doz 6d. extra.									
		2/10	1/11	16	4/6	8d.	8d.	{ 3 doz. Qts., 6 doz. Pts., 12 doz. Nips, 3 doz. Syphons, 4 Cases of 2 1-gall. Jars, or 2 Cases of 4 1-gall. Jars.			
A	B	Over 30 miles	3/1	2/2	1/7	4/6	9d.	9d.			
C	D	" 80 "	3/4	2/2	1/9	4/6	10d.	10d.	{ 6 doz. Qts., 12 doz. Pts., 16 doz. Nips, 3 doz. Syphons, 4 Cases of 2 1-gall. Jars, 2 Cases of 4 1-gall. Jars.		
E	F	" 130 "	3/7	2/2	1/9	4/6	11d.	11d.			
		" 180 "	3/10	2/5	1/9	4/6	1/1	1/1			
		" 250 "	4/1	2/8	1/9	4/6	1/3	1/3			
		" 250 " .. .. "									

\* Deposit on Cases and Bottles (returnable) charged as follows:—1 doz. Quarts, 3/-; 2 doz. Pints, 4/-; 4 doz. Nips, 7/-; 1 doz. Syphons, 26/-; 3 doz. Quarts, 9/-; 4 doz. Pints, 8/-; 6 doz. Pints, 12/-; Case of 2 1-gall. Jars, 4/6; Case of 4 1-gall. Jars, 9/-. These amounts are refunded when the Empties are returned in good order.

Certain places served by sea are excepted from the above rates, such as Aberdeen, Belfast, Brechin, Cork, Dublin, Dundee, Edinburgh, Forfar, Glasgow, Kildare, Limerick, Londonderry, Montrose, New-bridge, Newcastle-on-Tyne, Perth, St. Andrews, Tipperary, &c., which are supplied at Scale B; Isle of Wight, Jersey, and Guernsey at Scale E; Alderney and Sark at Scale C.

## SALUTARIS WATER CO.

The Distillery, 236 Fulham Road, London, S.W.

Telephone No. 629 Kensington.

Telegraphic Address: "SALUTARIS LONDON."

# Hunyadi János

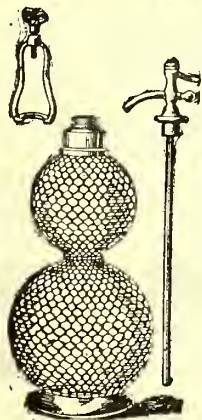
The Prices of the above (to the Trade) have been fixed by the Proprietor, Mr. ANDREAS SAXLEHNER, at—

22/6 per case of 25 large Bottles; 35/- per case of 50 half Bottles; for Single Cases. } NET CASH.  
21/- " " " 32/- " " " ; for 5 Case lots. } CARRIAGE PAID.

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Price List of all Natural Mineral Waters, Salts, &c., on application.



ESTABLISHED HALF A CENTURY.  
PRIZE MEDALS AWARDED AT ALL THE EXHIBITIONS.

SUPPORT ENGLISH MANUFACTURE.

### EUGENE CÉRAUT & CO.'S LATEST NEW PATENT SELTZOGENE

The Best Seltzogene Extant & Warranted.  
Wear and Working Guaranteed. No more  
Screwing required. Tap cannot get corroded.

GREAT REDUCTION IN PRICE.

Patent Wire. Cane.  
3-Pint..11/-..... 12/-  
6-Pint..14/9..... 15/9  
8-Pint..22/6..... 25/-

Large Discounts allowed  
off for quantities.

SELTZOGENES & SYPHONS.

### SYPHONS.

Best English Block Tin Tops  
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18/- per dozen.

HEADS of guaranteed quality.

VASES—Best Crystal and  
Colours.

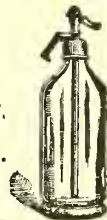
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CONTRACTORS TO HER MAJESTY'S GOVERNMENT.

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From "Eucalyptus Globulus." An authentic regenerator of the hair, instantly stopping its falling off, and is invaluable for hairdressing; a safeguard in epidemic times, protecting surrounding the respiratory functions from malarious and vitiated emanations. In Bottles at 2/6, 3/6, 4/6, 7/-, 10/-, &c.

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**E. H. THIELLAY**

Parfumeur-Chimiste, Amersham Park, New Cross, LONDON.  
(SHOW ROOMS AT CHARING CROSS HOTEL.) [2]

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CRETA PRECIP. S.P.

FINEST and WHITEST for DENTIFRICES and TOILET PURPOSES.

CHEAPEST SELLERS IN THE MARKET.

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TELEGRAMS: "LEVERMORE, LONDON." A.B.C. CODE USED.

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**GLUTEN FLOUR, Bread and Biscottes.  
SOYA FLOUR, Bread and Biscuits.**

MANUFACTURED BY

**G. VAN ABBOTT & SONS,**

Manufacturers of all Foods for Diabetics and Obesity,  
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Telegraphic Address—"GLUTENS LONDON." ESTABLISHED 1869.

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**ALCOHOL ABSOLUTE**, according to new "British Pharmacopoeia," in about 1-owl.  
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**S.V.R.** in 40-gallon Drums, pure tinned.

**AMMONIA, LIQUID ANHYDROUS** for Ice Machines.

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## Inventors **J. W. PINDAR & CO.** Inventors

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75 NEW CHURCH ROAD, CAMBERWELL, S.E.

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**A.J. BROWNING, LTD.,** The Laboratories, **GRIMSBY,**  
Supply the Cheapest and Best Work  
in England at the Lowest Price.

Sets on Vulcanite, 12/6. Partials, 1/3 Tooth; over 6, 1/- Tooth.  
SEND FOR PRICE LIST.

## SPENCER & SON, MECHANICAL DENTISTS TO THE PROFESSION, 88 South Street, GREENWICH.

FIRST-CLASS Work of every description on very moderate terms.

Send for Price Lists.

Great Reduction in Vulcanite Work. Punctuality Guaranteed.

ESTABLISHED 20 YEARS

## Corks! Corks!! Corks!!! RINGROSE & COBB,

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DISPENSING CORKS, 6 oz. and 8 oz., from 6d. per gross.

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SAMPLES FORWARDED TO "PATTERNS" OR STATED PRICE.

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High-class Dental Mechanism, in Gold, Dental Alloy, Tubes, Gum Sections,  
Vulcanite Celluloid, or their Combinations, by

**A. J. FENTIMAN & CO.,** Dentists,

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MODERATE CHARGES.

ESTABLISHED 1885. Telegraphic Address—"LULLINGLY LONDON."

**BUY HEARNS  
BOTTLES  
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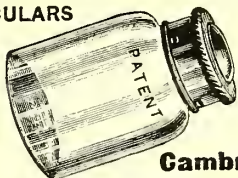
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Prices and Samples on Application.

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PER 7/ GROSS  
1/2 LB. PKTS.

Special Quotation large  
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3 Gross & upwards.

SAMPLE FREE ON  
APPLICATION.

## SUPERIOR CHLORIDE of LIME

FULL STRENGTH AND WEIGHT.  
Packed in 1/2, 3/4 and 1 lb. Packets (with or without  
our name on). **AIRTIGHT & WATERPROOF.**  
Best and Neatest Packet on the MARKET.  
Please address in full, to avoid mistakes in delivery.

**H. HEBDEN (M.P.S.),**

Wholesale Pharmaceutical Chemist,  
HOPE WORKS, KING CROSS, HALIFAX.

A Large and  
Varied Stock  
to choose  
from.

Inspection  
invited.

Samples sent  
on approval.

## VANILLA!!!

Finest Beans, 8 to 9 inches	--	--	26/-, 28/- per lb.
Medium " 6 " 7 "	--	--	22/-, 24/- "
Short " 3 " 5 "	--	--	19 6, 21/- "
Manufacturing quality	--	--	18/-, 19/- "

**FELIX PAVIA, VANILLA MERCHANT.**  
28 St. Mary-at-Hill, E.C.

Koseals  
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**CACHETS**

Apparatus "Morstadt"  
from 2/6 to 30/-

**THOS. CHRISTY & CO.**  
23, Lime St., London, E.C.

WHITE or COLOURED 3/-  
PRINTED or EMBOSSED 3/6  
With Names of Drugs or  
Complaints 3/-

**KOSEALS**

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## STAINLESS IODINE OINTMENT.

Antiseptic. Non-irritant.  
Widely advertised in leading papers.  
Of all Druggists' Sundriesmen  
SPECIAL TERMS TO SHIPPERS.

Proprietors: — **KELPION CO.,**  
59A Bishopsgate Within, LONDON.

## TO WHOLESALE & EXPORT CHEMISTS.

# Price's Patent Candle Company Ltd.

BELMONT WORKS, BATTERSEA, LONDON, S.W.,

ARE PREPARED TO QUOTE FOR

**OILS.** Neatsfoot, Lard, Animal, Olive, Cooking, Castor, Cod, Sperm, Coconut,  
Palm, etc.

Water White Mineral Oil, free from Sulphur (Paraffinum Liquidum B.P.)

**LARDS.** Prepared, Benzoated, Indurated.

**WAXES.** Beeswax, White Wax, Ceresine, Paraffin Wax, Japan Wax, Spermaceti.

**PETROLEUM JELLY "Ceratine" White or Yellow, Plain or Scented.**

Samples and Price Lists on Application.

## GENUINE EMERY, EMERY CLOTH, AND BLACK LEAD.

# JOHN OAKEY & SONS, LIMITED,

MANUFACTURERS OF

Glass and Flint Paper, Emery and Glass Cloth; Emery, Black Lead, Emery Wheels  
Pumice, Putty Powder, Crocus, Urn Powder, Tripoli, Rouge, Plate Powder, Steel Polish,  
Furniture Polish, Knife Boards, Brunswick and Berlin Black, &c.

## OAKEY'S WELLINGTON KNIFE POLISH

Prepared expressly for Oakey's and other Knife Boards, Buff Leather Boards, and all the Patent Knife Cleaning Machines.  
Sold in Canisters with perforated Tops to prevent waste, at 1d., 2d., 3d., 6d., 1s., 2s. 6d., and 4s. each.

## OAKEY'S NON-MERCURIAL SILVERSMITH'S SOAP,

For Cleaning and Polishing Silver, Plate Glass, Marble, &c. Tablets, 6d. each.

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A Magio Pomade for Cleaning Brass, Copper, Tin, Pewter, Britannia Metal, &c. Never becomes dry and hard like other Metal Paste.  
Tins, 1d., 2d., 3d., and 6d. each.

## WELLINGTON BLOCK BLACK LEAD

In 1d., 2d., and 4d. Blocks, and 1s. Boxes.

## WELLINGTON EMERY & BLACK LEAD MILLS, Westminster Bridge Road, London, S.E.

Highest Award and Prize Medal, Philadelphia Exhibition, 1876; and Boston, 1883. Gold Medal, Crystal Palace, 1884.

# P. BEIERSDORF & CO.

Hamburg-Eimsbüttel, manufacturing chemists of :



BEIERSDORF's Guttapercha-Plastermulls  
according to Dr. Unna.  
BEIERSDORF's Paraplasts, according to Dr. Unna.  
BEIERSDORF's Salvemulls, according to Dr. Unna.  
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BEIERSDORF's Rubber Adhesive Plaster  
in pieces and on Spools.  
BEIERSDORF's Medicated and Porous Rubber  
Plaster.  
BEIERSDORF's "Cito" Sport Adhesive Plaster  
on Spools.  
BEIERSDORF's Mercolint-Bib (chest protector)  
No. 1, No. 2, No. 3, according to  
Dr. Blaschko.  
BEIERSDORF's Aromatic Potassium Chlorate  
Tooth Paste.

Lists and samples on application.

AGENT FOR ENGLAND

HUGO LORENZ, 7-8 Idol Lane, LONDON, E.C.



## H. POTHS & CO.

Bury Court, St. Mary Axe, LONDON, E.C.

SHOP BOTTLES & JARS with vitrified labels  
PERFUME BOTTLES, SCREW-CAPPED BOTTLES,  
Graduated Measures and  
Druggists' Sundries.

## BOTTLES FOR ALL REQUIREMENTS

*Trial Orders and enquiries solicited by*

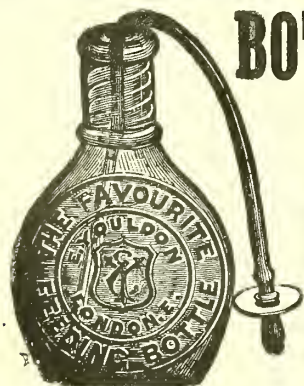
## E. YOULDON,

ESTABLISHED 1840,

East London Glass Bottle Warehouse,

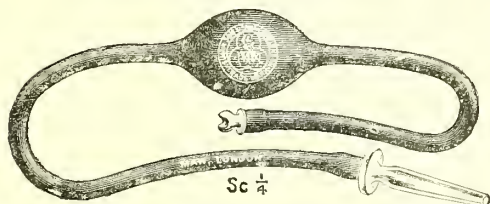
36, 38 & 40 GREAT GARDEN ST., WHITECHAPEL, LONDON, E.

Telegraphic Address—"YOULDON LONDON."

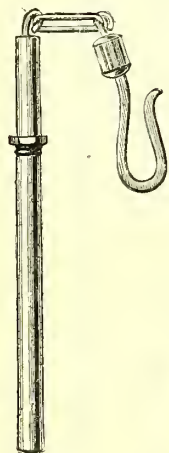


# MAW'S

SEAMLESS



ENGLISH MAKE, 20s., 23s., 36s., 44s. per dozen.



## "RESETTA" THERMOMETER CASE.

Registered No. 310227.

*An easy method of Resetting the Index of a Clinical Thermometer.*

**RETAIL, 1/- EACH.**

## RESPIRATORS.

MAW'S METALLIC - - from 10s. to 72s. doz.

MAW'S IMPROVED (the Original pattern), Gilt, 62s. doz.

## SPECTACLES, &c., a large variety.

TRIAL GLASSES, for testing sight, 42s., 84s., £7 10s. &c., per set.

## I.R. HOT WATER BOTTLES.

8 × 6, 3/3, 12 × 6, 4/5, 10 × 8, 5/1, 12 × 8, 5/11, 14 × 8, 6/4,  
14 × 10, 7/-, 14 × 12, 8/9, 16 × 10, 7/8, 16 × 12, in. 9/2 each.

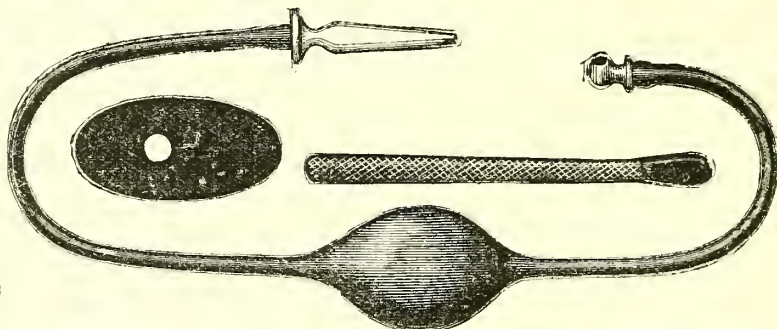
*Covers for above, Imitation Sealskin, 18s. doz.*

**S. MAW, SON & THOMPSON, 7 to 12 Aldersgate Street, LONDON.**

# THE 'EMPIRE' ENEMA.

**17/-**  
NET.

PER DOZ.  
UNPOLISHED.



**18/-**  
NET.

PER DOZ.  
POLISHED.

This is a FULL-SIZED Enema, made of Vulcanized Rubber, and has two important qualities never before combined, except in high-priced Enemas, viz.:

**IT WILL NOT GET STICKY** **IT WILL NOT GET HARD**  
*in hot weather, and in cold weather.*

**WE GUARANTEE THEM FOR TWO YEARS.**

We also supply Druggists' Sundries in great variety, Stockings, Hot-water Bottles, Combs, Sponge Bags, Syringes, Catheters, Trusses, Elastic and Waterproof Goods of all kinds.

Owing to the continued rise in raw material we are obliged to notify a small advance in prices of a good many of our articles. Particulars of this advance have been posted to all Chemists on our books, and will be sent to others on application.

**OUR GOODS ARE RIGHT AND PRICES LOW.**

WRITE FOR ILLUSTRATED CATALOGUE—POST FREE.

**BURGE, WARREN & RIDGLEY, 91 & 92 Great Saffron Hill, LONDON, E.C.**

REGISTERED  
TRADE MARK

# VIMULE

REGISTERED  
TRADE MARK

## SOLUBLE TABLETS

PREVIOUSLY ADVERTISED AS

**LAMBERT'S SOLUBLE QUININE TABLETS.**

PERFECTLY  
PREPARED.



ABSOLUTELY  
RELIABLE.  
SALE UPWARDS OF  
8,000,000.

These Tablets are manufactured by us of the best materials procurable. We guarantee every one to be of accurate proportions, and can with confidence recommend them to the trade as one of the best ever introduced.

They are packed in specially neat metal boxes of 1 doz., and sealed with our Registered Label, without which they are not genuine.

Our method of packing particularly adapts them for exportation. Being practically air-tight they will keep in perfect condition for a long period, and liability to injury by variation of climate is reduced to a minimum.

Advertised to retail at 2/- per box of 1 dozen. 5/- for three boxes. 8/6 for six boxes. 17/- for 12 boxes.

**Trade Price.**

12/6 net per dozen boxes of 1 dozen each.

Single boxes 1/3, including postage.

Orders of  $\frac{1}{2}$  doz. boxes and upwards sent post free.

Can be obtained through any wholesale house.

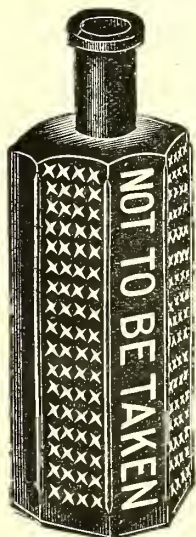
PERFECTLY  
PREPARED.



TRADE PRICES  
MODERATE.  
SALE UPWARDS OF  
8,000,000.

**A. LAMBERT & CO., 18 DALSTON LANE, LONDON, N.E.**

# The Practical Poison Bottle.



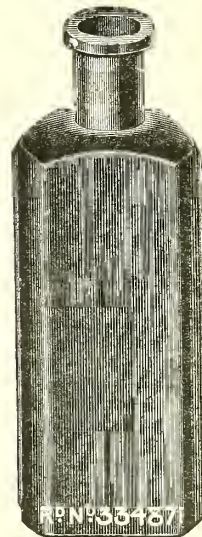
FRONT.

The Bottle for Council's regulations *re* Carbolic Acid.



RD. NO. 334871.  
BOTTOM.

## Principal Features.



BACK.

The Practical Poison Bottle has been designed by one of the largest *practical* bottle-makers in the trade, and possesses the following advantages :

**Touch.**—One side of the bottle is made as rough as possible with diamond projections, and this, with the prominent ribs at the corners, makes the bottle at once distinguishable by touch and conform perfectly to the Poison Regulations. The other side is smooth, but the bottle cannot be handled in any way without its peculiar shape being noticed.

The **Shape** is different from any other bottle ever produced, being a combination of the flat and octagon poison bottle.

**Strength.**—All the corners are rounded, thus doing away with weak corners and making the bottle as strong as possible, and reducing breakages in packing and handling to a minimum.

**Labelling and Packing.**—A smooth side is provided for the label, of ample dimensions for full-sized dispensing-labels. The shape of the bottle admits of it being wrapped, without waste of space and paper, so as to make a neat parcel.

**Sizes.**—It is made in all sizes, from two-drachm to twenty-ounce capacity, and in either blue or actinic green glass.

**Price.**—It is one of the cheapest and simplest and best-finished bottles ever placed before the trade.

## To be obtained from

Maw, Son & Thompson, Aldersgate Street, London, E.C.

Evans, Lescher & Webb, 60 Bartholomew Close, E.C.

Evans, Sons & Co., 56 Hanover Street, Liverpool.

J. Sanger & Sons, 2 Winsley Street, London, W.

# PARAFFINUM

GOLD MEDAL,  
Greater Britain  
Exhibition,  
London, 1899.

**MOLLE, Alb., Flav.**  
**LIQUIDUM P.B., 1898.**

## Analytical Report on Stern's Paraffinum Liquidum.

"The sample was odourless, colourless, tasteless, and non-fluorescent. It was free from sulphur compounds, and answered the stringent requirements of the New British Pharmacopœia. The specific gravity at 60° F. was 0.882. For all practical purposes I am of opinion that this is sufficiently near to the B.P. limit of 0.885, especially as it has been shown that a higher gravity gives a less pure product.

"It is admirably adapted for the numerous uses, both internal and external, for which Liquid Paraffin has been successfully employed.

(Signed) "E. J. MILLARD, F.C.S., F.R.M.S.,  
"33 Lothair Road, Finsbury Park, N."

Sole Makers:  
Messrs. STERN BROTHERS, 57 Gracechurch Street, E.C.

SOLE MAKERS  
4 FACTORIES):

**STERN BROS.,** 57 Gracechurch St., LONDON, E.C.; and at GLASGOW.

Telegrams—"Centumvir London."

## Analytical Report on Stern's Paraffinum Molle, Alb. & Flav.

"The samples of six qualities of White and Yellow Petroleum Jelly submitted to me for analysis fully answered the requirements of the New British Pharmacopœia for Soft Paraffin (Paraffinum Molle).

"There were no traces of fixed oils, fats, or resin in any of the samples, and no residue on ignition.

"The neutral character and satisfactory consistence of the Jellies and the absence of acrid odour when melted, showed that they had been carefully manufactured.

"In respect to quality they are superior to most of the Petroleum Jellies on the market. (Signed) "E. J. MILLARD, F.C.S., F.R.M.S., Ac."

Sole Makers:  
Messrs. STERN BROTHERS, 57 Gracechurch Street, E.C.

## MACKEY'S

# TERPINOL FLUID.

A Powerful Disinfectant and Deodorant. As supplied to H.M. Post Offices and Public Buildings. It is Non-poisonous, and will not Stain or Destroy Articles of Clothing.

SOLE MAKERS—

**MACKEY, MACKEY & CO., Ltd.,** Manufacturing Chemists,

175 GRANGE ROAD, BERMONDSEY, LONDON, S.E.

Telegraphic Address—"Terpinol London."

Telephone No. 539 Hop.

# DAY, SON & HEWITT.

*Largest Makers in the World of*

**HORSE, CATTLE, & SHEEP MEDICINES.**



*The Greatest Animal Restorative of the Age.*

*Acts like Magic for*

**Fret, Colic, or Gripes in Horses**

**Colds and Chills**

**Hoven or Blown Cattle and Sheep**

**Scour or Diarrhœa**

**General Debility in Stock**

PRICE: 1/9 per bottle; 20/- per doz. box.



*Or Inflammation Powder for*

**Colds, Indigestion, Costiveness**

**Red Water, Fevers, Yellows**

**Hidebound, Loss of Cud, &c.**

**Specially adapted for**

**Cows Calving, Ewes Lambing**

PRICE: (Cows, &c.) 13/- per doz. Packets.



*The Antidote of Pain, Inflammation, & Gangrene*

FOR

**Wounds, Cuts, Bruises**

**Sore Shoulders, Saddle Galls**

**Rheumatism and all Bad Swellings**

**Broken Knees, Cracked Heels**

**Strains of Ligaments and Tendons**

PRICE: 2/6, 3/6, and 7/- per bottle.

The Great Cure for  
**HUSK, HOOSE, COUGH, &  
TAPEWORMS**

**In Heifers, Calves, Sheep,  
and Lambs.**



PRICE: 2/9 per bottle; Quart, 10/6; 1/2-Gallon, 20/-.

The Great Cure for  
**HUSK, HOOSE, COUGH, &  
TAPEWORMS**

**In Heifers, Calves, Sheep,  
and Lambs.**

Address:—**22 DORSET ST., LONDON, W.** (Liberal Terms to Agents, and full particulars on application.)

Only  
ONE  
Address.

Established 1840.

# Day & Sons, Grewe.

HORSE, CATTLE, SHEEP & DOG MEDICINES.

Only  
ONE  
Address.



### DAYS' BLACK DRINK (often called "The Magic Drink").

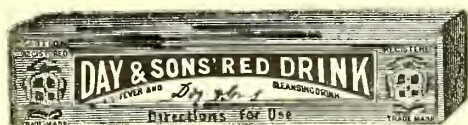
Cures like a Charm Colic or Gripes, and Sudden Chills in Horses and Cattle, Hoven or Blown Cattle and Sheep, Scour and Weakness in Calves and Lambs, &c.

Price 1/8 per Bottle.



### DAYS' PURIFIED DRIFFIELD OILS (Days' Oils).

Heals Kicks, Cuts, Stake Wounds, Broken Knees, Sore Teats, Swollen Udders, and all Wounds in all Animals. A soothing and Antiseptic Oil for Lambing and Calving. Price 2/6 and 6/- per Bottle.



### DAYS' RED DRINK, or Cow Drench.

For Costiveness, Loss of Ond, Gargit, Colds, Fever, Hide-bound, &c. Prevents Milk Fever, and Cures Bad Cleansing.

Price—1/- per Packet; for Ewes, 3/6 per dozen.



### DAYS' HUSKOLEIN.

Almost infallible for Tapeworms in Lambs, and for Hask, Hoose, Hoart, or Worm in the Windpipe, and Lungworm in Calves, Lambs, Heifers, and Sheep. In Large Bottles, price 6/8.

### THE "ORIGINAL" UNIVERSAL MEDICINE CHEST.

For DISORDERS of HORSES, CATTLE, and SHEEP.

Price, with Guide, "Everyday Farriery," £1 4s., £2 4s., and £5.

### THE "ORIGINAL" HORSEKEEPERS' MEDICINE CHEST.

Arranged specially for DISORDERS in HORSES.

Price, with Guide, "Everyday Farriery," £1 4s., £2 14s., and £5.

# PASSING OFF MEDICINES

## AS AND FOR DAY & SONS' MEDICINES.

HIGH COURT OF JUSTICE, CHANCERY DIVISION.

### DAY & SONS, Plaintiffs, v. RILEY & WHITTAKER, Defendants.

Read Mr. Justice Buckley's judgment, delivered on the 15th May, 1900, in reference to Riley and Whittaker passing off their Colic Draught as and for Day & Sons' Black Drink:

"It is plain from the evidence that what the Defendants have done is to dress up their goods in such a form as to induce the belief that they were the goods of the Plaintiff. The Plaintiffs are, in my opinion, entitled to an Injunction restraining the Defendants, their Agents and Servants, from passing off, or attempting to pass off, the Defendants' goods as and for the Plaintiffs' goods, and in particular from selling, or offering for sale, so as to induce the belief that it is the Plaintiffs' manufacture, any preparation of medicine for animals not of the Plaintiffs' manufacture by means of the use of the title 'Black Drink,' or any title colourably differing therefrom, or by means of the use of bottles similar in shape to the Plaintiffs' bottles, or of labels similar to, or only colourably differing from, the Plaintiffs' labels, or otherwise got up in any manner similar to, or only colourably differing from, the Plaintiffs' preparation. I grant that Injunction."

This will justify us in frequently and urgently cautioning the public against such persons, and clearly show the solid grounds we have for saying: "Beware of imitators and dishonest traders."

Note that the old original "BLACK DRINK" only can come from DAY & SONS, Crewe, and that it is our intention to take instant proceedings against persons pirating our Titles and Labels.

# IZAL

## Disinfectant (Non-Poisonous.)

### Non-Corrosive. Non-Irritant.

~~~~~

"The Disinfectant, used in the strength of 1 in 200, completely destroys in five minutes the vitality of the microbes of cholera, diphtheria, influenza, erysipelas, typhoid fever, &c."—See BACTERIOLOGICAL REPORT.

**HER MAJESTY'S WAR OFFICE,**  
 Recognising the superiority of Izal, are using no other disinfecting fluid in the

**SOUTH AFRICAN CAMPAIGN** (See the *Times*, November 30, 1899.)

The quantity ordered is sufficient to make over  
**11,000,000 gallons reliable germicide.**

Izal is ideal for Obstetrical work. In the Official Report on Calcutta Medical Institutions for 1898 the following passage occurs: "The obstetric physician writes: 'The small number of deaths among patients that were admitted septic but confined inside the hospital is a noticeable fact. It may be mentioned here that nothing but Izal lotion was used for all these cases as for all other obstetrical purposes.'"

### IDEAL FOR DOMESTIC USE.

The recent Order scheduling liquid preparations of Carbolic Acid and its homologues as poisons does **not** affect IZAL.

**Izal Fluid.      Izal Powder.      Izal Soaps.**  
**Izal Medical Preparations.      Izal Toilet Preparations.**

.....

**SOLE MANUFACTURERS—**

**NEWTON, CHAMBERS & CO., LTD.,**  
**THORNCLIFFE, near SHEFFIELD.**

# THE GREAT AND MARVELLOUS INSECT DESTROYER.

Entirely different from any other Beetle or Flea Powder.

"VIKO" will kill Cock-roaches.  
"VIKO" will kill Moths.  
"VIKO" will kill Fleas.  
"VIKO" will kill Bugs.  
"VIKO" will kill Mos-quitoses.  
"VIKO" will kill Ants.  
"VIKO" will kill all In-sects.  
"VIKO" will not kill Dogs  
"VIKO" will not kill Cats.



"VIKO" as a preventive against Moth is unrivalled. It has no equal. If sprinkled amongst Furs and Clothes instantly destroys any existing Insect Life, and ensures perfect freedom from a return of the pest.

Its effect upon Insect Life is simply marvellous.

REGISTERED.  
Sold in 3d., 6d., & 1s. Tins.

SOLE PROPRIETORS—  
**TUNBRIDGE & WRIGHT, READING.**  
Manufacturers of the "World-Famed FLY CEMETERY"

TO PREVENT DISAPPOINTMENT, ORDER EARLY.

The World Famous Sticky Fly Paper.

# 'THE FLY GEMETERY'

FREE FROM POISON.

The Original and by far the Best Sticky Fly Paper in the Market.

Annual Sale—MILLIONS.

BEWARE  
OF THE MANY  
SPURIOUS  
IMITATIONS  
IN  
THE MARKET.



STOCK  
A FLY PAPER  
THAT WILL GIVE  
SATISFACTION  
TO YOUR  
CUSTOMERS.

Terms, &c., from

**TUNBRIDGE & WRIGHT, READING.**

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French Agency—84 Rue St. Martin, Cognac.

**IMPORTANT NOTICE.**—If any of our customers have any over year's stock of our Fly Cemeteries on hand, we shall be pleased to exchange same for fresh goods free of cost.

TELEGRAMS—"FLIES READING."

# Little's Specialities.

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| Non-poisonous Fluid Dip (the Original). | Fly Powder.                              |
| Poisonous Powder Dip.                   | Maggot and Cattle Wash.                  |
| Non-poisonous Paste Dip.                | Phenyle Disinfectant, Powder, and Soaps. |
| Poisonous Liquid Dip.                   | Carbolic Soft Soap.                      |
| Foot Rot Cure.                          | Antipest.                                |
|                                         | Weed Killer.                             |

**MORRIS, LITTLE & SON, Ltd.**  
**DONCASTER.**

# TO CLINICAL THERMOMETER BUYERS SHIPPERS, &c.

**DENTON'S CLINICAL THERMOMETERS** have had a constantly-increasing sale for upwards of a quarter of a century. They are guaranteed the best English make. There are various patterns to choose from. They are reliable, accurate, and neat. One trial is sufficient to recommend them. They are in use all over the world. All standard patterns kept in stock (special kinds and scales made to order). Our latest pattern, the "Quickset," can be "set" with only one or two shakes, thus avoiding the trouble of swinging the arm for five minutes. They are the greatest boon on the market for Nurses, as they save fatigue, Wholesale of

**S. G. DENTON** (Maker to the Government).  
Correspondence Invited. 25a Hatton Garden, LONDON.

What the Trade thinks about

# "COBWEBS."

Unsolicited Testimonial.

Mr. J. P. FAST, Chemist, Walsall, wrote:

"Sept. 26th, 1898.

Please send one gross 'Cobwebs' per return. P.O. 5/- enclosed. This makes my 20th gross this season. Before selling 'Cobwebs' my annual sale of sticky Fly Papers used to be about two gross."

**"COBWEBS," 5/- per gross, carriage paid.**

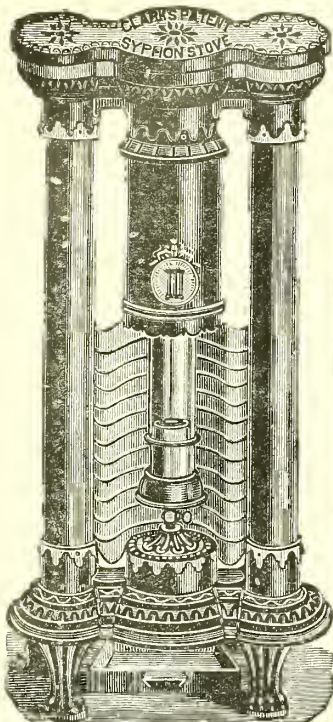
CASH MUST ACCOMPANY ORDER.

SAMPLES FREE.

Millions sold annually.

**CHRISTY STRONG, READING.**

# TO CHEMISTS AND DRUGGISTS.



## AGENTS WANTED FOR THE SALE OF "THE SYPHON" (Registered Title) HYGIENIC CONDENSING GAS HEATING-STOVES

(CLARK'S PATENT)

A Necessary for all Invalids.  
A Comfort to Everybody.

**NO FLUE REQUIRED.  
FREE FROM SMELL OR SMOKE.**

All injurious vapours are reduced to harmless liquid inside the Stove, and passed out at foot into a tray provided for that purpose.

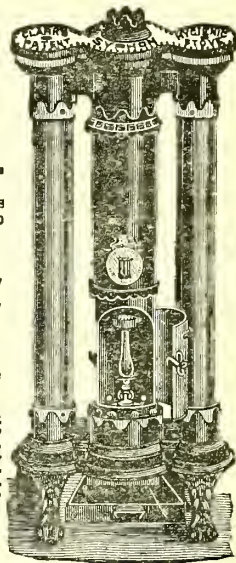
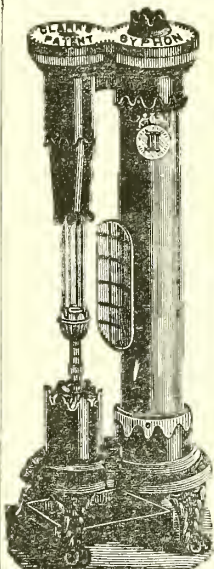
For use in Hospitals, Sick Chambers,  
Bedrooms, Halls, Conservatories, Schools,  
Shops, &c.

**A LIBERAL DISCOUNT ALLOWED.**

The "Syphon" Stove is admirably adapted  
for heating Chemists' and Druggists'  
Shops and Stores. The heat is evenly  
diffused, and can be graduated or sus-  
tained at pleasure.

For Terms, Particulars, and Prices, apply to

**S. CLARK & CO.,** Patentees & Makers, SYPHON WORKS, PARK ST., ISLINGTON, LONDON, N.  
Telegraphic Address—"SYPHON STOVES LONDON" Wholesale Agents—Messrs. MAW, SON & THOMSON, Aldersgate Street, London.



## PARAFFINUM MOLLE

IMPORTERS AND SOLE AGENTS FOR AMERICAN

**Yellow and White Petroleum Jellies, B.P.,**

Refined by the Union Petroleum Company,  
Philadelphia, U.S.A.

All our Petroleum Jellies are pure American. Chemists  
therefore should ask for Hatrick's Petroleum Jellies.

**JAMES L. HATRICK & CO., LIM.**  
82 Turnmill Street (next Booth's Distillery), E.C.

## DISPENSING BOTTLES.

**THE NORTH LONDON GLASS BOTTLE COMPANY**

(I. ISAACS & CO., Proprietors)

Bag to inform the Trade that they have made a further re-  
duction in the price of their Bottles, as follows:—

The NEW SHAPE FLAT BOTTLES, with rounded edges, plain  
or graduated—

3 & 4 oz. .. 9/- per gross. | 10 & 12 oz. .. 15/- per gross.  
6 .. 8 .. 10/- .. | 16 .. 18/- ..

WHITE MOULDED PHIALS, plain or graduated Teaspoons—  
1 oz. .. 3/8 per gross. | 1 1/2 oz. .. 4/8 per gross.  
1 .. 4/- .. | 2 .. 5/8 ..

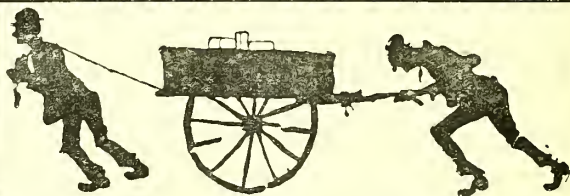
**PLEASE NOTE.**

Six gross and upwards, assorted or otherwise, are carriage paid  
to any address in England; smaller quantities not carriage paid.

**I. ISAACS & CO.,** Glass Bottle Manufacturers,  
106 MIDLAND ROAD, ST. PANCRAS, LONDON.

Established 50 years.

Bankers—London and Westminster Bank



Write for Catalogue of **LIGHT DELIVERY CARTS,  
with AERATED-WATER RACKS.**

Five Specially-constructed Models for Chemists,  
use to select from.

## ROTHSCHILD & BAKER,

Parcel Cart and Invalid Carriage Manufacturers,

**Summer Row, BIRMINGHAM.**



## NEWSHOLMES'S POCKET SPITTOON

Registered No. 349532.

**To Prevent the Spread of  
Tuberculosis, &c.**

This Pocket Spittoon has been brought out  
on the lines suggested by the Medical Officer  
of Health for the City of Sheffield.

Made of dark blue glass, having closely-  
fitting nickel-plated lid.—Just fits the hand-  
kerchief pocket, and may be readily emptied  
and sterilised.

Price 1/6 each. 16/- per dozen.

In gross lots, 15/- per dozen.

Carriage paid on 1 dozen and upwards.

Sole Maker: **G. T. W. NEWSHOLME,**  
Manufacturing Pharmaceutical Chemist,  
**27 HIGH STREET, SHEFFIELD.**

# WHAT THE PUBLIC SAY

OF

## ASHTON & PARSONS'

### Homœopathic

## PILULES & TINCTURES.

Preferred ASHTON & PARSONS' to any others.

Mr. C. HINE writes: "I was glad to see that M—— & P—— were your agents, as I have always preferred your Homœopathic preparations to any others. I think they are more reliable. I have used an immense quantity of them and never found them to fail. There is a good deal of humbuggery amongst local manufacturers of Homœopathic medicines."

Insisted upon ASHTON & PARSONS' only.

Mr. W. H. DALE writes: "Being an old customer for Podophyllum Pilules, I have insisted upon having ASHTON & PARSONS' ONLY, and would NOT be put off by 'THESE ARE JUST AS GOOD.'"

More effectual than any other makers'.

Mr. A. C. NUTTALL, Manchester, writes: "We prefer your medicines, for we have found them more effectual in use than those of other chemists."

More effectual than any he had ever used.

The Rev. JOHN PEART writes: "I am glad to say your medicines are more effectual than any I have ever used or seen during the past twelve years. I recommend them everywhere with the utmost confidence in their merits."

ASHTON & PARSONS' are best—tried many others.

Miss E. DAWES writes: "We use your medicines, and consider them to be the best, after having tried many others."

Used them over thirty years.

Miss BENNETT writes: "Have used the medicines over thirty years; find them most useful."

Always Reliable.

Mr. SYDNEY EVANS writes: "We have used your medicines for eight years and never known a single failure, and they have saved us pounds."

What a Brisbane Chemist says.

A leading Brisbane Chemist writes: "I can certainly state a preference is shown for your preparations over those of any other make."

A Leyton Chemist.

A Leyton Chemist writes: "I find your brand sells without any explanation."

A Wootton Bassett Chemist.

A Wootton Bassett Chemist writes: "I only stock your medicines now, as I find they give more general satisfaction than any other."

A West Indian Agent.

A West Indian Agent writes: "I am very pleased to report that your preparations are getting to be more and more highly appreciated by all classes of the community."

# ASHTON & PARSONS'

## Large 1/- Size

## HOMŒOPATHIC

## PILULES and

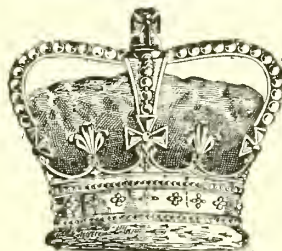
## TINCTURES.

PER DOZ. **1/3** NET.

MOTHER AND STRONG POTENCIES ALWAYS SENT UNLESS OTHERWISE ORDERED.

**AVOID MAKERS**

who do not publish their prices, and so prevent them charging varying rates.



## KINGS AND QUEENS.

The distinguished honour of having received commands from

H.R.H. THE PRINCESS OF WALES  
H.I.M. THE EMPRESS OF RUSSIA  
H.M. THE QUEEN OF ROUMANIA  
H.M. THE KING OF GREECE  
H.I.M. THE DOWAGER EMPRESS OF RUSSIA  
H.R.H. THE DUCHESS OF FIFE  
H.R.H. THE CROWN PRINCESS OF ROUMANIA  
H.I.H. THE GRAND DUCHESS SERGE OF RUSSIA  
H.I.H. THE DUCHESS OF LEUCHTENBERG  
H.I.H. THE GRAND DUCHESS OLGA OF RUSSIA  
H.R.H. PRINCESS ALEXANDRA HOHENLOHE-  
LANGENBURG  
H.I.H. THE GRAND DUCHESS XENIA OF RUSSIA  
H.H. THE FURSTIN OF SCHWARZBURG  
H.R.H. PRINCE CAROL OF ROUMANIA  
H.I.H. THE GRAND DUCHESS ELIZABETH OF  
RUSSIA  
H.S.H. THE HEREDITARY PRINCESS OF LEININGEN  
H.H. PRINCESS REUSS, &c., &c.,

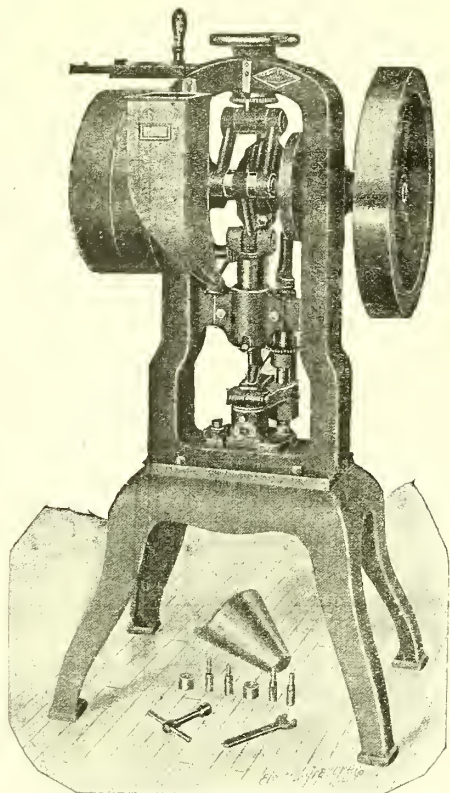
is a unique example of the world-wide popularity and unparalleled excellence of the medicines.

**ASHTON & PARSONS, LTD.**  
*Homœopathic Chemists,*  
**17 FARRINGDON ROAD, LONDON, E.C.**  
ESTABLISHED 1867.

# COLTON'S IMPROVED SINGLE PUNCH TABLET MACHINE EXCELS THEM ALL.

Simple and Reliable Adjustments for regulating both the weight and pressure of tablet, without the use of wrenches; Perfect Alignment of Punches; how easy to adjust lower punch flush with the top of die; its convenience in extracting shoe and other parts; the increase of power with our toggle equipment; and its capability of compressing at the rate of 120 tablets per minute.

These are a few of the good qualities of importance which embody our **SINGLE PUNCH TABLET MACHINE**, the merits of which we **ABSOLUTELY GUARANTEE**.



## COLTON'S GELATIN PILL-COATING MACHINE.

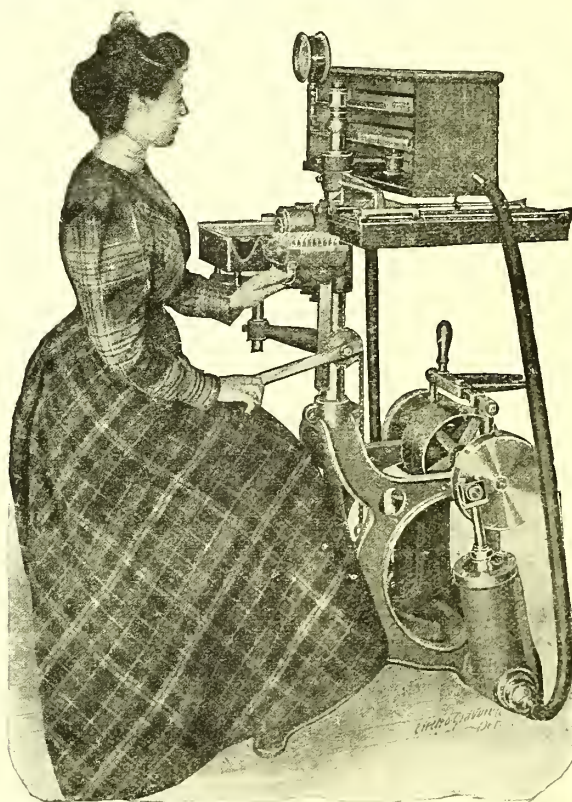
*Capacity 25,000 per day of 10 hours.*

*One Operator.*

It is designed and built especially for manufacturers just entering into the Pill Business, or where only a small capacity is required.

It does the work precisely the same as on our larger machine, and plates can be furnished for coating any size pill, or for various sizes, as desired.

It is simple in construction and complete in itself, only requiring to be belted from the main shaft when it is ready for use.



FOR FURTHER PARTICULARS AND INFORMATION ADDRESS—

**ARTHUR COLTON, DETROIT,**  
MANUFACTURER OF  
**Pharmaceutical Machinery, MICH., U.S.A.**



# IALINE



(Registered)

## DISINFECTING COMPOUNDS

MANUFACTURED BY

**BURT, BOULTON & HAYWOOD, Ltd.**

**IALINE "A" FLUID**, 25 per cent. tar acids, besides other antiseptic properties.

**IALINE "C" FLUID**, 23 per cent. tar acids. 35 and 50 per cent. **DISINFECTING FLUIDS.**

**No. 2 DISINFECTING FLUID**, 16 per cent. tar acids.

**PINE OIL DISINFECTANTS.**

*Special arrangements made with the Trade.*

**IALINE OINTMENTS**, for human use, and also for animals.

**CARBOLIC POWDERS**, 5, 10, 15, and 20 per cent., specially prepared.

**NAPHTHALINE AND CARBOLIC TABLETS**, for keeping off attacks of moth, &c., and for disinfection.

**WEED KILLERS.**

*Samples and Prices on application.*


## THE RAPID MIXER.

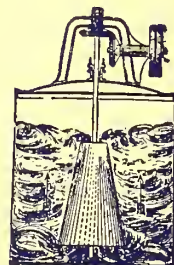
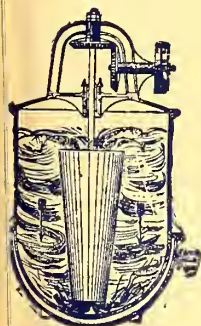
(Burt, Boulton & Haywood, and E. R. Gabbett's Patent.)

**Bronze Medal Awarded by the Sanitary Institute Exhibition at Birmingham, 1898.**

This Mixer is specially suited for all operations where the Perfect Admixture of Liquids or Semi-Liquids is required, irrespective of their difference in specific gravity.

**CAN BE MADE IN ANY MATERIAL, EVEN GLASS OR STONWARE, AND IS THEREFORE APPLICABLE TO THE MOST CORROSIVE SUBSTANCES.**

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"First Aid to hand. Many thanks  
It is a very useful book Indeed."

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January 29, 1900.



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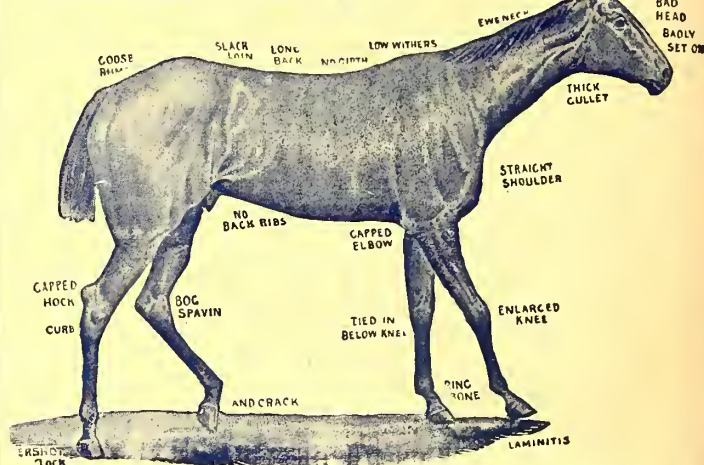
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ABSOLUTELY PURE,  
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Cadbury's is "The Typical Cocoa of English Manufacture, Absolutely Pure"—The Analyst.

NO CHEMICALS USED IN CADBURY'S AS IN THE SO-CALLED PURE FOREIGN COCOAS.

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The "A1" Oil is manufactured by us in Grasse from the finest Olives of the Riviera.

Hand-picked, ripe fruit only is used for the purpose.

A careful study made of the different methods used in the production of Olive Oil in the Riviera has enabled us to conduct its manufacture on the best principles. The "A1" Oil, every gallon of which is made under our own direct supervision, is Virgin Oil obtained by moderate pressure from hand-picked fruit.

The "A1" Olive Oil is pronounced by Epicures to be the sweetest and to have the finest bouquet of any Oil they have tasted.

The price in bulk is 8/6 per gallon, and in Foreign Glass Bottles bearing a specially drawn label—

Reputed Quarter-pints 3/9 per doz.

Reputed Pints ... 11/3 per doz.

" Half-pints ... 6/6 "

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Imported direct and guaranteed to be a genuine French White Wine Vinegar; Salads made with this Vinegar and the "A1" Olive Oil according to the recipes supplied with each bottle of the latter will be greatly appreciated. Price 3/6 gallon.



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